Investigating the Relationships Between Teacher Identity Norms and Collaboration

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Abstract

The purpose of this study was to investigate how teacher identity norms relate to teacher collaboration among the practices of elementary teachers in Ontario. Using quantitative research methods, the data indicated two clusters of teacher identity norms. The norm cluster of innovation, interdependence, and cooperation showed positive correlations with collaboration and the norm cluster of conservatism, individualism, and competition showed negative correlations with collaboration. The two clusters of norms also correlated with each other. The data showed that teachers highly valued collaboration as part of their teaching practice but did not always experience it in their school setting. The analysis suggested that if schools reinforce norms of innovation, interdependence, and cooperation, collaboration will be nurtured. Further, the data showed that if norms of conservatism, individualism, and competition are continued in school cultures, then collaboration will not be sustained. As a broad educational reform agenda, teacher collaboration is used (a) to support school cultures, (b) to change teaching practices, and (c) to implement policy-based initiatives. This research is expected to benefit teachers in its capacity to inform policy makers concerning the highly complex nature of teacher collaboration and some of the factors that impact it. With an understanding of the relationships between teacher identity norms and collaboration, it may be possible for policy makers to provide appropriate support structures that reinforce collaboration in teachers' practices as well as predict potential levels of collaboration within school cultures.

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CHAPTER ONE: INTRODUCTION TO THE STUDY

In these troubled, uncertain times, we don't need more command and control; we need better means to engage everyone's intelligence in solving challenges and crises as they arise. (Margaret J. Wheatley, 2005, p. 64)

Don't listen to a man who says we have to work together as a team. He means we have to work as he says. (C. J. Langenhoven, 1958)

Teacher collaboration is a relatively new addition to the profession of teaching. In the past century, when one-room schoolhouses were prevalent, most teachers "must have gone without association with other teachers for long periods of time" (Lortie, 1975/2002, p. 14). This cellular pattern of teachers being isolated from other adults was sustained well into the late 1950s (Lortie, 1975/2002). Even with the advent of schools composed of multiple self-contained classrooms, this pattern of organization continued. The physical cellular organization and cultural professional isolation of teachers' work remains embedded in school cultures in this century.

Despite the recent push for more teacher collaboration, "the cellular organization creates boundaries that prevent colleagues from sharing" their expertise (Lortie, 1975/2002, p. xi). Without teacher collaboration, teachers' classroom doors are closed to new ideas, both "literally and metaphorically" (Lieberman & Mace, 2010, p. 78). By identifying ways in which teacher collaboration can be nurtured or inhibited, teachers can build learning communities with their colleagues and, with the support of their community, develop their practice beyond their classroom doors, thus unlocking the potential benefits of collaborative practices. The focus of this investigation, therefore,

was to examine the relationships between teacher collaboration and the teacher identity norms that may impact it in school cultures.

Ontario Context

In the last decade, learning communities have been implemented as a broad educational reform agenda in Ontario. These learning communities have been used as a policy initiative to implement various changes in the Ontario educational landscape. In learning communities, teachers work together to set goals, solve problems, and work out the practicality of various policy initiatives in their classrooms and schools. According to Hargreaves (1994), "in this simple yet deeply influential sense of practicality among teachers is the distillation of complex and potent combinations of purpose, person, politics, and workplace constraints" (p. 12). As a key component of learning communities, well-developed teacher collaboration has become an integral strategy for implementing school-based reforms and policy-directed changes to education.

The push for promoting teacher collaboration has gone from teachers simply meeting as a group to the hierarchical restructuring of schools in which learning community organization has become embedded in the educational landscape (Gajda & Koliba, 2008). Professional educational bodies and teacher federations in the United States, Britain, and Canada, for example, advocate for learning communities and the teacher collaboration that supports it (American Federation of Teachers, 2011; Elementary Teachers Federation of Ontario, 2011; General Teaching Council for England, 2003; National Board for Professional Teaching Standards, 2004; Ontario College of Teachers, 2006). In Ontario, the Ontario College of Teachers' Professional Learning Framework specifies that "Learning communities enhance professional

learning. The professional learning framework encourages collaboration. It supports ongoing commitment to the improvement and currency of teaching practice as an individual and collective responsibility" (Ontario College of Teachers, 2015, p. 23). Further, the Elementary Teachers Federation of Ontario defines learning communities as "A group of education professionals who share common visions, values, and goals, and work collaboratively using inquiry, experimentation, and innovation to improve teaching and student learning" (2015, n.p.). The federation supports teachers' involvement in learning communities when teachers' participation is voluntary, is based on collegiality, respects members professionalism and autonomy, is supported with funding, and contributes to teachers' professional growth.

The push towards building teachers' collaborative cultures in Ontario has been supported by such policy initiatives as Teacher-Learning Critical Pathways (Ontario Ministry of Education, 2008), Teaching-Learning Critical Pathways: Hubs and Networks (Ontario Ministry of Education, 2010), Collaborative Inquiry (Ontario Ministry of Education, 2014), and Teacher Learning Leadership Program (Ontario Ministry of Education, 2015). This large-scale educational change strategy was implemented in Ontario in order to promote increases in literacy and numeracy for all students using a "tri-level" approach (Fullan, 2009, p. 102) involving governments, school districts, and schools in working together "on common approaches and strategies" (Levin, 2007, p. 330). A component of this change strategy was to support the "development of learning communities in schools and boards through the creation of leadership teams ... and the emphasis on sharing good practice" (Levin, 2007, p. 329). This "collaborative, not a top-down, approach" (Levin, 2007, p. 330) provided resources such as time and space for

teachers to meet. The tri-level approach was meant to build collaborative capacity among teachers and was supported by teacher leadership teams. By using teacher leadership to drive change, teachers acted as change agents by influencing "organizational capacity, professionalism, instructional improvement, and student learning" (York-Barr & Duke, 2004, p. 255).

In summary, these various organizations advocate for teacher communities that support and reinforce teachers' participation in embedding collaborative practices within school cultures. The assumption underlying these initiatives is that teacher collaboration not only enhances teachers' practices but it also acts a vector for educational change. It is through teachers' collaboration that educational change becomes reality; it is how policy becomes practice.

Challenges of Policy Development and Implementation

Within educational change, Ball (1993) states that all policies "are textual interventions into practice" (p. 12), meaning that policies are meant to change how teachers teach, how administrators lead, and how students learn. With this intervention comes the process of mediated policy making at the various levels where intervention is meant to create change. Further, policy implementation at all levels involves "negotiation, contestation, or struggle between different groups who may lie outside the formal machinery of official policymaking" (Ozga, 2000, p. 113). Thus, policy making is a complex process of interpretation and translation where policies are "contextually mediated and institutionally rendered" (Ball, Maguire, & Braun, 2012, p. 2). As policy initiatives are translated into action, they tend to be adapted and reinvented to meet the

needs of the subjects of the policy (e.g., administrators and teachers) and their specific location (e.g., schools and classrooms).

The more abstract a policy is from the application in practice, the more likely the policy initiatives will be mediated into a form that can be applied to the practice (Ball, 1993). Policy implementation thus includes "contested creative and mundane social interactions" that link policy texts to practice (Colebatch, 2002, p. 2). In educational policy making, the functions of policy are implemented by teachers as "they are actors and subjects, subject to and objects of policy" (Ball et al., 2012, p. 3). As major players in policy implementation, teachers decode and recode policy texts in the process of understanding and translating with various degrees of intentional and unintentional interpretation (Clune, 1987; Fuhrman, Clune, & Elmore, 1991).

This policy translation can result in confusion and disjointedness where “policy texts may be collectively undermined” (Ball, 1993, p. 12). The intent of a policy initiative drifts as it makes its way through the layers of gatekeepers (e.g., superintendents, administrators, and teachers), becoming more mediated with each step in the implementation process. Competing theories between change authors (i.e., governments and school boards) and change implementers (i.e., principals and teachers) can cause conflicts between the vision of policy and the practice of policy (Timperley & Parr, 2005). This can result in gatekeepers’ experiencing "most carefully planned" initiatives unfolding in a "non-linear manner" (Timperley & Robinson, 2000, p. 47) and thus having gatekeepers changing policy initiatives when situating the initiatives within their locations.

Due to the nonlinear manner of policy implementation, organizational change takes time (Kotter, 2006). Change happens in not just a year or 2 but possibly 10 to 15 years because reforms have to filter down through the layers of existing practices and previous reforms to become embedded in teaching practices. Schleicher (2009) states:

> Every few years a new reform idea is put on the top, creating below it 10 to 15 years of layers of often unfinished and incoherent reforms. This is because with an approach where educators at the frontline implement ideas conceived at higher levels of an organization through cascades of regulation and training, this is the amount of time it takes to implement change. At the end of the process, students, teachers, and schools can then be confronted with a blend of past direction they often do not understand or own. (p. 99)

The tensions between policy development and implementation imply that policy making is not static; policy is always changing as "it is reviewed and revised as well as sometimes dispensed with or simply just forgotten" (Ball et al., 2012, p. 3). Policy is thus always in the "process of becoming" (Ball et al., 2012, p. 3). As policy becomes practice, policy implementers, like teachers, adjust policy to fit practice. At all levels of implementation, policy actors "choose what they want to attend to, what they think will be of most value and sideline any alternatives that do not fit with their agendas" (Ball et al., 2012, p. 3), thus modifying policies further.

In the complex process of policy implementation, teachers experience challenges with implementing educational reforms where previous policy initiatives have not met their objectives (Fullan, 2001). In the layers of educational initiatives, an "array of policies" (Grossman & Thompson, 2004, p. 2), implemented simultaneously in schools,

can cause policy overload within teachers' practices (Fullan & Hargreaves, 1996). Further, teachers' thinking is focused on the complexities and ambiguity of their classroom practice and not necessarily on system-wide views of initiative implementation (Timperley & Robinson, 2000). This means that policies developed with the system-wide perspective of policy authors may conflict with the classroom-bound perspectives of teachers. Teachers' reactions to the "fragmented and cluttered" policy implementation process (Timperley & Robinson, 2000, p. 47) may be viewed as teachers being resistant to change but instead may be a response to the accumulation of past policy experiences, policy overload, policy fragmentation, and competing perspectives.

As a strategy for creating greater cohesion in systemic educational reforms and supporting the process of policy implementation, learning communities have been advocated to give teachers more influence over educational change (Fullan, Hill, & Crévola, 2006; Timperley & Robinson, 2000). However, the process of making policy or enacting policy through teacher collaboration can also cause uncertainty as complex interactions and interconnections continue to play out in collective policy implementation (Ball et al., 2012). The policies promoting teacher collaborative practices face the same mediated policy implementation process as other education policies and, as a result, experience the same policy fragmentation and ambiguity which therefore result in a failure to produce change.

In the complexity of implementation, education policies often fail to produce sustainable organizational change in educational practice (Ball, 1993; Fullan & Hargreaves, 1996). According to Greenfield (1993), organization theory "implies that we have at hand both the theory and method which permit us to improve schools and the

quality of whatever it is that goes on within them" (p. 3). In other words, educational leaders believe that a chosen theory or policy will produce the intended improvements in their schools. Instead, Greenfield contends, "change in schools proceeds without assistance from an applied organization theory or, indeed, in contravention to it" (p. 3). Even when organizational policies do not present the intended results, policy authors still believe in the design of the theory and method of organizational change. Greenfield further argues that although this reality "usually fails to shake our faith in such theory" (p. 3), it implies that "we need to ask whether the theory and assumptions still appear to hold in the settings where they were developed before they are recommended and applied to totally new settings" (p. 4).

Since teacher collaboration is being used as a policy reform vector in schools, assumptions of how teachers collaborate need to be considered to clarify the literature lacking in this area. In making assumptions about how teachers collectively implement policy, policy authors need to address the level of agreement between their view of schools' collaborative environment and the reality of schools' collaborative cultural settings. Several authors (e.g., Hargreaves & Fullan, 2012; Lieberman, 2009; Sahlberg, 2010) suggest that schools' collaborative cultures are influenced by teacher identity norms. By identifying teacher identity norms that reinforce or inhibit teacher collaboration, policy authors may use this knowledge to develop educational reforms that have a better chance of implementation and sustainability.

Role of Teacher Collaboration in Educational Change

The focus on teacher collaboration as an educational change strategy has meant that schools, in general, are altering the ways in which teachers work. In the past, teachers

were professionally isolated, working within the walls or "cellular organization" (Lortie, 1975/2002, p. xi) of their classrooms. With the push towards building collaborative communities, teachers have stepped beyond the doors of their classrooms to work with other teachers. Successful collaboration, however, requires changes to other aspects of teachers' work. As Timperley and Robinson (2000) point out, "organizing principles developed to meet the challenges of managing single-cell classrooms, such as individualism, autonomy ... impede the systematic thinking required for developing coherence in reforms which go beyond the unit of the classroom" (p. 47). In short, teachers need to change their thinking (a) from working primarily with students to working closely with professional colleagues, (b) from working in a classroom within a school to working in school systems, and (c) from being individual, autonomous teachers to being part of an interdependent team of teachers.

In addition, the integration and inclusion of students with differentiated needs and learning plans signify that more than one teacher may engage with particular students (Lortie, 2005). This means that a community of teachers, not just one teacher, may be responsible for students, as is currently the case for students with special education needs. With the inclusion of special education students into mainstream classrooms, "specialization and the increases in coordination that it requires produce more occasions when teachers -- used to working largely on their own -- must regularly take each other's interests and viewpoints into account" (Lortie, 2005, p. 142). In this case, classroom teachers and specialists work together in the same space, sharing the same students and the reporting that goes with them (Lortie, 2005). This implies that teachers cannot delegate responsibilities as they are jointly responsible for these students. Regardless of

whether teachers are working with students with special needs or jointly supporting mainstream students in their practice, teachers need to work collaboratively to support all students within their school (Fisher, Frey, & Thousand, 2003).

With changes towards more collaborative teaching practices, teachers need to develop shared norms on how to negotiate the complexity of working in collaborative groups (Lortie, 2005). As Lortie (2005) points out, "Unfamiliar problems can lead to tensions within the staff" (p. 142), which can lead to conflict between group members. Even within situations of conflict, "professional etiquette" (Lortie, 2005, p. 142) needs to be adjusted and sustained so group efforts can be coordinated and moved forward. In order to address these tensions, promoting open discussions and encouraging thoughtful resolutions could move "peer relationships towards a new balance which emphasizes cooperative rather than individualistic work" (Lortie, 2005, p. 142). Lortie (2005) suggests that researchers may be able to identify teachers' "norms and values which hinge on that traditional [individualistic] form" (p. 143) of working in self-contained classrooms and then develop the complementary norms and values that nurture more collaborative practices. Identifying teacher norms that impact collaboration may provide a means to improve teachers' collaborative practices.

Despite the attention that has been devoted to building teachers' collaborative work, the sustainability of these professional relationships remains a challenge (Hargreaves, 2010b; Lortie, 2005; Sahlberg, 2010). Even after years of implementation, teacher collaboration is still not fully embedded within teachers' practices. Hargreaves and Shirley (2009a), for example, found in a British study that the teacher identity norm of individualism is still sustained in schools. Lortie (2005) also notes that the culture of

individuals teaching in self-contained classrooms still remains. Yet, teacher collaboration remains an important and pervasive component of educational change regardless of the reason for collaboration, whether to support systemic policy implementation or to meet the diverse learning needs of students.

Statement of the Problem Context

Even though teacher collaboration holds an integral place in the discourse of contemporary education, it continues to be a challenge to implement and sustain in school settings (Hargreaves, 2010b; Lortie, 2005; Sahlberg, 2010). The benefits of collaboration rarely live up to expectations because the need for collegial harmony can "take precedence over enhancing the validity of information fundamental to quality decision making" (Timperley & Robinson, 2000, p. 48). Thus, harmonious collegial responses are preferred over making decisions that challenge cohesive group agreement. An essential element of collaboration is teachers' commitment and capacity to collaborate with one another, but teachers are often ill-prepared for the complexity and conflict they face in collegial interactions (Achinstein, 2002), which arises from the impact of many individuals voicing multiple ideas and competing agendas (Levin, 2001). Under such conditions, the ideology of collaboration does not meet with the realities teachers face (Levin, 2001). Yet, in spite of these challenges, teachers' collaborative cultures remain a cornerstone to upgrading school effectiveness and enhancing professional growth (Kougioumtzis & Patriksson, 2009).

The focus on teachers working together has initiated technical and cultural changes in schools. Working together requires a different set of skills than working alone. As teachers move from working as individuals in their classroom to working in

interdependent collegial teams, they need to adjust their skills in order to collaborate with multiple colleagues with competing perspectives. Teachers working alone in their classrooms may be unfamiliar with the complexity of working collaboratively where teachers may debate issues like educational approaches to pedagogy. This means that teachers need to adjust their collegial culture and shift their work out of their classrooms into shared spaces and mindsets. As the ideology of work shifts, Tichy (1980) contends that changes in one cycle will trigger changes in one or both of the other cycles. Tichy points out that "the dynamic interrelationships among the parts of the organization and the degree to which the organization fits with its environment must be simultaneously analyzed from the technical, political, and cultural perspectives (p. 172). Since schools are organizations that are "dynamic and always undergoing shifts and changes," schools need to make technical, political, and cultural adjustments as "all three cycles overlap and interact with each other in ways that may be beneficial or problematic for the organization" (Tichy, 1980, p. 165). These adjustments to change are not static and take time.

In the case of teacher collaboration, the technical and political shift of teachers working collaboratively has triggered a cultural shift in teachers' professional identities. Asking professionals who are accustomed to working as individuals to work as members of a collaborative group has created cultural and organizational adjustment challenges in schools. In addition, teachers' thinking has had to shift from focusing on the challenges and complexities of their classroom practice to thinking and acting beyond their classroom doors by including colleagues and other students within their school in their

practice. This cultural shift has resulted in changes in the professional values and beliefs of teachers' practices.

Organizational cultures are determined by the values and beliefs or "normative glue" (Tichy, 1980, p. 165) of its members. Cultural change occurs when "there are shifts in cultural values in the environment" (Tichy, 1980, p. 171). When organizations face cultural change, they "must determine what values need to be held by what people" (Tichy, 1980, p. 165) in order to make the appropriate adjustments to remain organizationally cohesive. As teachers shift their values and beliefs (i.e., their professional identities) from working as individuals to working as a group, this shift in perspective results in very different ways of interacting with other teachers as "alignment of strategic [school-wide] activities requires coordination among staff who are accustomed to a high degree of independence" (Timperley & Robinson, 2000, p. 46). Understanding the relationships between and among teacher identity norms and teacher collaboration can help schools manage this cultural shift more effectively.

Available research suggests that teacher identity norms impact teacher collaboration (Hargreaves, 2010b). However, no large-scale quantitative data have been collected to investigate the relationships among teacher identity norms and teacher collaboration. In other words, there is no research that captures how teachers' identities are implicated in the move towards a professional collaborative culture. The research is clear on the importance of teacher collaboration in building collaborative communities (Achinstein, 2002; Gajda & Koliba, 2008; Hargreaves, 1991). What is not known is the connection between the way teachers work, the way they collaborate, their identities as teachers, and their identities as colleagues. This gap is addressed in this study.

Purpose of the Study

The purpose of this study was to investigate how teacher identity norms relate to teacher collaboration within an elementary school setting. The literature highlights clusters of teacher norms of conservatism, innovation, individualism, interdependence, competition, and cooperation that may correlate with teacher collaboration. Using quantitative research methods, I investigated the relationships between and among these norms and their relationships with teacher collaboration. In addition, the levels of collaboration and teacher identity norms were examined with respect to the impact of specific demographic variables.

Research Questions

The following questions were explored:

1. How do teacher identity norms correlate with teacher collaboration?
2. What relationships are evident among teacher identity norms?
3. What impact do the demographic characteristics of career stage and gender have on teacher identity norms and on teacher collaboration?

Hypotheses

Hypothesis One: Teacher identity norms will correlate with teacher collaboration.

Hypothesis Two: Teacher identity norms will correlate with each other.

Hypothesis Three: Teachers' stage of career and gender will affect collaboration and teacher identity norms.

Rationale

Most of the research dealing with teacher identity is qualitative in nature. The specific literature citing teacher identity norms of individualism and conservatism and the

link to collaboration is also qualitative (Hargreaves & Fullan, 2012; Lortie, 1975/2002). To date, the research has failed to capture direct links between the identity norms of individualism, conservatism, and competition and the levels of teacher collaboration. In addition, there is little research examining the teacher identity norms of innovation, interdependence, cooperation, and competition. Further to this, the available research does not address the relationships between and among these norms (i.e., how innovation, interdependence, cooperation, conservatism, individualism, and competition relate to one another). The quantitative approach used in this study addresses these gaps by investigating the relationships between the identity norms of teacher collaboration and the extent and direction of any relationships that might exist among the specified norms.

Teacher collaboration is expected to have a positive impact on teachers' practices and the implementation of policy because it provides a forum for professional and personal support (Hargreaves, 1994; Hargreaves & Dawe, 1998). Teacher collaboration provides teachers with opportunities to work together and to distribute tasks such as planning curriculum units, sharing collegial subject expertise, and coordinating team activities. As Hargreaves (1994) claims, "collaboration eliminates duplication and removes redundancy between teachers and subjects as activities are coordinated and responsibilities are shared" (p. 245). The process of sharing work can lighten teachers' workload but can also increase it because "when reform requires a systemic response ... [the need for group coherence is] likely to result in increased workload" (Timperley & Robinson, 2000, p. 47). When teachers work together, it does not always save time but it can free up time for teachers to work on broader school-based initiatives that go beyond their classroom door. In addition, "instead of isolated and competitive teachers," a

school's community can provide "mutual emotional support as well as shared curriculum and teaching responsibility" (Hargreaves & Fullan, 2012, p. 110).

Although teacher collaboration has not been directly linked to student achievement and student success, it has been shown to improve teachers' professional practices. Hord and Tobia (2012) argue that collaborative work has a positive impact on teachers' practices, students' learning, and school culture. They state that there is anecdotal evidence and research that shows teachers' engagement in collaborative learning teams results in improvements in teaching and learning. Teacher collaboration (a) promotes collective practice-based problem solving (Hargreaves, 2000), (b) counters professional isolation, and (c) fosters a collective reform in school cultures (Achinstein, 2002). In addition, collaboration encourages "risk taking [and] greater diversity in teaching strategies" (Hargreaves, 1994, p. 245), and improves teachers' self-confidence through positive feedback and encouragement from other teachers. This collaborative process can develop more innovation, interdependence, and cooperation among teaching practices. When teacher collaboration focuses on student-centred and classroom-centred concerns, students benefit in an environment where teachers address practice-based problems and where deep changes in teaching practices are fostered (Hargreaves, 2000). Therefore, by improving the teacher collaborative experience, students and the schools benefit.

In this study, the relationships between teacher identity norms and collaboration on demographic variables were investigated. This purpose grew out of debates in the literature showing, for example, that older teachers were perceived as being less able to cope with educational change and less flexible in adapting to this change (Redman &

Snape, 2002). In addition, Day (2002) contends that the last few years of teachers' careers may be "the time of greatest conservatism" (p. 62) but states that years of teaching experience and stage of career are not the only issues that impact teachers' participation in professional development. These perceptions imply that older, more experienced teachers may show higher levels of individualism and conservatism and may not collaborate as much as their less experienced, younger peers.

Further to this, gender may impact how teachers interact with each other as the idea of collaborative learning cultures may be grounded in feminist principles (Acker, 1995). This could be interpreted to imply that female teachers may be more collaborative than male teachers. By investigating the links between collaboration and teacher identity norms and demographic variables, such as stage of career and gender of teacher, this research may highlight differences in collaborative practices among teachers due to their demographic profiles.

Since teachers are the conduit between policy goals and classroom implementation, teacher collaboration plays a key role in the implementation of policy. By identifying specific teacher identity norms that relate positively or negatively with teacher collaboration, this information may facilitate more fluid interactions regarding the challenges faced in teacher collaboration and the complexity of the process of policy implementation.

This research is expected to benefit teachers in its capacity to inform policy makers, educators, district boards, administrators, union leaders, and teachers concerning the highly complex nature of teacher collaboration and some of the factors that impact it. It will give these groups an understanding of how teacher collaboration is nurtured and/or

inhibited among teachers. With an understanding of the relationships between teacher identity norms and teacher collaboration, it may be possible for policy developers and administrators to provide appropriate support structures, such as time, space, materials, and expertise (Hord & Tobia, 2012), that encourage teachers to become more collaborative in their practice. It is my hope that this research will inform changes to organizational and physical structures as well as educational policies in order to promote collaborative practices among teachers.

Scope of the Study

This study was limited to investigating teacher collaboration among permanent contract-status elementary teachers in public schools in Ontario. Literature suggests that secondary school teachers tend to be less collaborative than their elementary colleagues (Timperley & Robinson, 2000) and have been characterized by working in small fractured departmental groups. Consequently, only elementary teachers were selected so that the nature of teaching in different panels (i.e., elementary vs. secondary school teachers) was not an intervening variable that affected the findings regarding the nature of teacher collaboration. In addition, temporary occasional contract teachers were exempt from the sample as their experience with teacher collaboration may vary from their colleagues with permanent contracts and, hence, may not be statistically representative of the population of teachers with contracts. Since only English public school teachers were recruited, the study included teachers from only public school systems in rural, urban, and northern parts of Ontario. In order to focus the scope of the study, the Catholic, French, and private school board teachers were not recruited.

The study was limited to the quantitative investigation of how the teacher identity norms of conservatism, innovation, individualism, interdependence, competition, and cooperation relate to collaboration by means of a researcher developed online survey.

Outline of Remainder of the Document

Four chapters follow this introductory chapter. The second chapter is a review of the literature related to teacher collaboration and its function in supporting school culture, changing teachers' practices, and implementing school-based and policy-directed initiatives. The literature highlights three clusters of teacher identity norms that may impact teacher collaboration: (a) conservatism/innovation, (b) individualism/interdependence, and (c) competition/cooperation. A review of the literature related to building teacher collaboration is followed by a discussion on the importance of building a strong collaborative landscape and the role of leadership.

The third chapter describes the research methodology and the survey design of quantitative correlational research. This chapter outlines the steps taken to develop an instrument. It explains the process of refining items through exploratory factor analysis of pilot study data, and it describes the refined instrument. The chapter then provides the study's research questions and hypotheses, details of the site and participant selection, data collection and storage, and data analysis. The chapter then addresses the assumptions and limitations of the methodology and the reliability and validity measures. The chapter concludes with the ethical considerations and a restatement of the area of study.

Chapter Four reports the findings of this quantitative research that investigated the relationship between teacher identity norms and collaboration within teachers' practices in public elementary school boards in Ontario. It presents a demographic profile of the

participants, followed by the results drawn from correlation tests undertaken to determine the relationships among and between variables and from analyses of variance to determine the impact of demographic variables on collaboration and teacher identity norms.

Chapter Five includes a summary of the research findings and a comparison of those findings discussed in the literature. Chapter Five discusses implications for future research and practical applications. The conclusion addresses the ongoing issues around teacher collaboration and how this research may impact them.

CHAPTER TWO: LITERATURE REVIEW

> If teachers are told what to be professional about, how, where and with whom to collaborate, and what blueprint of professional conduct to follow, then the culture that evolves will be foreign to the setting. They will once again have 'received' a culture. (Cooper, 1988, p. 47, as cited in Hargreaves, 1991)

In the last 10 years, there has been a systemic drive towards developing and managing teacher collaborative communities. Although these communities vary in definition and configuration, they all have at least one thing in common: teachers working together collaboratively. Little (1982) describes teachers working together as "an array of specific interactions by which teachers discuss, plan for, design, conduct, analyze, evaluate, and experiment with the business of teaching" (p. 338). Despite the continued promotion of collaborative teaching practices, the sustainability of teacher collaboration in school settings remains a challenge in the educational landscape (Hargreaves & Fullan, 2012; Lortie, 1975/2002).

Teacher collaboration can be formal or informal and can have various levels of teacher autonomy and administrative involvement. As teacher collaboration encompasses a great many activities and purposes, it can mean many things from the perspectives of governments, districts, administrators, and teachers. In an attempt to impact student achievement through professional learning and changes in teaching practices, governments, districts, administrators, and teachers use collaboration as a strategy for educational change reform.

As teachers work together to implement policy reform in schools and classrooms, it is important to understand what factors reinforce or limit teacher collaboration. The

literature examines some teacher identity norms that may impact teacher collaboration. By understanding how these norms influence teacher collaboration, it may be possible to identify why teacher collaborative cultures are sustained or challenged. To counteract barriers to building teacher collaboration, teacher identity norms that support collaboration can be reinforced within school cultures.

In this chapter, relevant literature is reviewed to provide a foundation for a deeper understanding of the concept of teacher collaboration and the teacher identity norms that may impact it. The review begins with an examination of the organizational structures and purposes of teacher collaboration. Following this, the impact of how teacher collaboration influences school settings is examined. Next, research outlining teacher identity norms is discussed. After that, the barriers to teacher collaboration are addressed. The building of collaborative landscapes follows and includes the role of leadership on collaborative school cultures.

Organizational Structures of Teacher Collaboration

"Although what counts as collaboration might vary, the overall evidence is consistent - teachers who work in professional cultures of collaboration tend to perform better than teachers who work alone" (Hargreaves & Fullan, 2012, p. 112).

As collaboration is a complex endeavor, Hargreaves (1991) states that before trying to direct teacher collaboration, it is important first to understand its meaning, complexity, and various forms, including informal and formal collaborative structures. Further, when defining collaboration, Hargreaves (1991) cautions that there are "many faces of collegiality" but "there is no such thing as 'real' or 'true' collaboration or collegiality. There are only different forms of collegiality that have different

consequences and serve different purposes" (p. 49). "Collaborative cultures not only can be informal but they also must always be informal because without investment in underlying relationships, collaboration will be stilted, forced, and even damaging" (Hargreaves & Fullan, 2012, p. 114).

Informal, unstructured teacher collaboration tends to benefit teachers the most (Brook, Sawyer, & Rimm-Kaufman, 2007) as it is integral to building a sustained collaborative culture in schools (Hargreaves & Fullan, 2012; Nias, 1989). Formal, structured forms of collaboration include those initiated by governments, districts, or administrators where teachers are given defined tasks and specific objectives such as implementing reforms that originate outside the school setting. The formal forms of collaboration are usually managed and directed by groups other than teachers.

Hargreaves (1994) provides a categorization of collaborative structures based on various levels of teacher autonomy and administrative involvement. In *spontaneous collaboration* (Hargreaves, 1994, p. 1486), teachers function as a social supportive group where collaborative working relationships evolve naturally and are sustained through the teaching community itself with no involvement from administration. The second category is *voluntary collaboration* where more formal, scheduled collaborative relationships develop from teachers' experience and have little input from administration. The third category is *development-oriented collaboration* where teachers work together and receive support from administration to implement externally supported or mandated initiatives to which they have a commitment. The fourth category is *pervasive collaboration* where teachers are scheduled by administration to meet in order to work collaboratively on administratively guided and controlled initiatives. Hargreaves and Fullan (2012) offer an

addendum to these categories by defining *arranged collegiality* where administrators establish time and spaces to put teachers in touch with each other. In these spaces, administrators can build elements that support high-trust collaborative cultures and encourage "conversations and activity more tightly around teaching and learning" (Hargreaves & Fullan, 2012, p. 118). However, arranged collegiality can morph into managed or “contrived collegiality” (Hargreaves & Fullan, 2012, p. 119) if administrators control teacher interactions through managerial meeting agendas, lists of working groups, and data teams (Hargreaves & Fullan, 2012).

Purposes of Teacher Collaboration

Little (1990a) refers to the wide range of types of collaborative activities as a “plethora” (p. 509) of teacher collaboration. Teachers can collaborate in a number of different activities, contribute to various levels of school function, and hold “multiple memberships” in different collaborative groups (Little, 1990a, p. 529). Considering the diversity of collaborative venues, the words *teacher collaboration* encompass a great many activities. The result is teacher collaboration can mean many things from the perspective of both teachers and administrators and, thus, the definition remains ambiguous.

Many collaborative activities can be solely teacher driven where colleagues develop and plan curriculum and assessments; meet to discuss grade level activities; and work together mentoring, co-teaching, or researching through various classroom inquiries (Hargreaves, 1994; Little, 1990a). Teachers can provide an extensive amount of input in classroom-based teacher practices because this collaboration is about the business of teaching.

In addition, teacher collaboration can be related to professional learning activities where teachers participate in the development and implementation of government or district initiatives. Here teachers work collaboratively to implement reform and policy initiatives that are directed from a source outside their school. As the implementation of reform and policy initiatives are usually directed by governments and districts, these collaborative activities tend to be highly structured and are meant to impact teaching practices and to increase student achievement.

Impact of Teacher Collaboration

A number of studies indirectly link teacher collaboration to improvements in student learning and achievement. In a meta-analysis study of secondary school teaching, higher levels of student achievement were linked to teachers' reflective dialogue, collaborative activity, and shared vision (Lomos, Hoffman, & Bosker, 2011). An educational study in Ghana revealed that teacher collaboration (a) rekindled teachers' efforts to support struggling students; (b) promoted innovative teaching practices; and (c) broke down social, cultural, and religious barriers among teachers and students (Mfum-Mensah, 2011). The research by Goddard, Goddard, and Tschannen-Moran (2007) shows an indirect link between higher student achievement and teacher collaboration. Hord and Tobia (2012) state that more and more "anecdotal evidence and research is accumulating that concludes teachers engaging in authentic professional learning teams results in improvements in teaching and learning" (Kindle location 861). In an interview with McLaughlin and Talbert (2010), the authors noted that in their research they "found repeatedly strong effects of teacher collaboration on gains in student learning" (p. 36). In

spite of this research, the link between teacher collaboration and school success is nonspecific.

Within the literature, the connections among teacher collaboration, student achievement, and school success continue to be indirect and lack clear links (Hindin, Morocco, Mott, & Aguilar, 2007; Vescio, Ross, & Adams, 2008). There is a "lack of clear connection to both improved student outcomes and elevated teacher performance" (Kougioumtzis & Patriksson, 2009, p. 135). Kougioumtzis and Patriksson claim that the absence of direct connection between teacher collaboration and improved student outcomes is due to the "multifaceted nature of schooling" (p. 135). Due to the complexity of schooling, they argue, it is hard to isolate teacher collaboration from other practices that contribute to student achievement and school success. Furthermore, even within the classification of teacher collaboration, there exists a variety of activities and practices that occur separately and in tandem with each other, thus making it difficult to link improvement to one factor. Regardless of the links to student achievement and school success, teacher collaboration continues to play a central role in the changing of how teachers teach and interact within their schools.

Since teacher collaboration is a key forum for the implementation of government and district initiatives and the changing of classroom practices (Fullan et al., 2006), it is important to examine factors that promote or limit teacher collaboration, as these factors can, in turn, promote or limit the implementation of government and district initiatives. By determining the factors that influence how teachers collaborate, structures, such as common planning time (Szczesiul & Huizenga, 2014), can be put in place to reinforce collaborative cultures. It is important to note when teachers' practices are not part of the

planning of a collaborative process but rather are managed by groups other than teachers, their commitment to a particular initiative may be limited. When managed collaboration happens, teachers tend to superficially implement the initiative and, in the end, the intended change will not be fully implemented or sustained (Hargreaves & Goodson, 2006), thus demonstrating the need for further investigation.

Teacher Identity Norms

The literature highlights clusters of teacher norms in three areas that may impact teacher collaboration: (a) conservatism/innovation, (b) individualism/interdependence, and (c) competition/cooperation. In order to move toward more collaborative practices, teachers need to change their teacher identities from working as individuals to working interdependently with collegial peers. By uncovering some teacher identity norms that impact teacher collaboration, educators can acknowledge possible reasons for challenges in developing sustainable teacher collaboration within school cultures.

In a culture of teachers working alone, individualism and conservatism are entrenched. Individualism in teaching practices happens when teachers prefer to work in isolation from other teachers (Lortie, 1975/2002). Hargreaves and Fullan (2012) define individualism as "habitual or enforced patterns of working alone" (p. 110), meaning that teachers are not collaborating with their colleagues nor relying on them as part of their teaching practice. Hargreaves (2010b) directly links individualism with conservatism "*If P (presentism) + I (individualism) = C (conservatism)* then reduced individualism will diminish conservatism, or *<I = <C* (holding presentism as a presumed or unstated constant)" (p. 147). Presentism occurs when teachers are only concerned with short-term gains in their practices. Conservatism in teaching practices happens when teachers follow

the status quo and fail to adapt and innovate their practices to meet their students' needs (Hargreaves & Shirley, 2009a). (For a definition of terms, see Appendix A.)When teachers work in isolation, they are not exposed to different pedagogical points of view and diverse teaching practices from working in collaborative groups. By contrast, when teachers work together, they have opportunities to grow their instructional repertoire by sharing innovative teaching practices. Hargreaves (2010b) further states that "collaboration reduces conservatism" (p. 148) and that "more collaboration and professional learning ... have the capacity to reduce *endemic* individualism and conservatism" (p. 151). In learning communities, strong collaboration is part of "vibrant communities of innovation and growth" (Hargreaves & Fullan, 2012, p. 111).

The research on the teacher norms of individualism and conservatism is limited to a few studies. Hargreaves and Shirley (2009b) used qualitative analysis as well as quantitative student achievement results to measure individualism and conservatism within 300 British secondary schools that changed as a result of the introduction of the government initiated Raising Achievement Transforming Learning (RATL). Within the RATL initiative, administrators and teachers worked together in networked communities of schools and were given considerable latitude in defining and addressing strategies to increase student achievement. Despite this community approach to increase student achievement, teacher individualism was reduced but teacher conservatism was not diminished (Hargreaves & Shirley, 2009b). Although her research did not link teacher collaboration to teacher norms, Lieberman (2009) suggests that the teacher norms of individualism and conservatism often inhibit teachers from learning from colleagues and limit collegial interactions that could result in improved teaching practices. According to

Hargreaves and Fullan (2012), working alone, with no feedback, advice, and support from colleagues, reinforces individualism and conservatism in teaching practices. When teachers work together, teachers' professionalism is maximized by creating opportunities for "purposeful peer interaction, help establish, and consolidate new norms of teachers working together, and build respect for each other," thus involving teachers in excellent prospects for purposeful learning (Hargreaves & Fullan, 2012, p. 158). "Every time you increase the purposeful learning of teachers working together, you get both short-term results and longer term benefits as teachers learn the value of their peers" (Hargreaves & Fullan, 2012, p. 90).

When teachers work in isolation, they have less opportunity or need to cooperate with other teachers. Alone in their practice, competition among colleagues happens when teachers compete for resources (Day & Smethem, 2009) and for recognition within the school setting (Johnson, 2003). Under competitive conditions, teachers are unlikely to share resources such as teaching materials, lesson plans, or practices with colleagues. When teachers do not cooperate with their colleagues, "colleagues tend to be more destructive than productive" (Kohn, 1986, p. 55). Within school cultures, "competition typically has an adverse impact on relationships because each person comes to look at everyone else as obstacles to his or her success" (Kohn, 2011, p. 76).

Collaboration can be professionally challenging when teachers deal with isolated subcultures in schools. These cultures can be linked to the teacher identity norm of competition as it creates professional divisions within schools. The presence of isolated subcultures occurs in schools when different teacher groups adopt “differing norms and set about defending them against the threat of other [teacher] groups” (Johnson, 2003, p.

347). As a result, teachers end up having to compete for recognition within the school setting. This recognition can take the form of administrators acknowledging the work of specific teachers or teacher teams and/or providing resources to meet specific teachers' or groups' requests. Providing recognition can leave the teachers who do not receive recognition feeling that their work is not valued (Johnson, 2003). Isolated subcultures (a) cause competition among colleagues, (b) put cooperation among teachers at risk, and (c) inhibit the growth of collaborative cultures. In order to avoid this, "professional interdependence should be balanced with spaces for individual autonomy and discretionary judgment" (Lavié, 2006, p. 788), thus allowing all teachers to be heard and recognized within school communities.

The literature on competition among teachers is restricted to comments about competition, with no supporting research findings. For example, Sahlberg (2010) notes that competition among teachers increases individualism, which supports Kofman and Senge's (1993) contention that competition negates cooperation between colleagues.

Although there are no qualitative or quantitative studies that examined competition among teachers, nor any research linking competition to teacher collaboration, there is literature that cites the impact of competition on students and on organizations outside of education. Research shows that cooperative structures among students reinforce achievement and peer relationships more than competitive or individualistic structures. Roseth, Johnson, and Johnson (2008) conducted a meta-analysis of 148 independent studies over 8 decades of research, which indicated that middle school students' "cooperative goal structures were associated with both higher achievement and greater positive peer relationships than were competitive or

individualistic environment goal structures" (p. 239). The meta-analysis showed "the effectiveness of cooperative over competitive and individualistic goal structures ... stressing the importance of instruction and on-going training when using [cooperative] instructional methods" (Roseth et al., 2008, p. 239). In addition, the students who showed more positive relationships had higher levels of achievement and interdependence with their peers. This meta-analysis shows that students working cooperatively increases their achievement levels and builds peer relationships.

In a meta-analysis of 201 studies representing 225 independent nonspecific (i.e. industry, tourism, business, and military) research papers dealing with populations of adults, Marcus and Le (2013) generated an individualism-collectivism (I-C) calculation which showed a correlation between levels of individualism-collectivism (I-C) and cooperation. Specifically, cooperation "was stronger in collectivistic as opposed to individualistic societies ... [and] I–C may in fact be an important predictor of organizationally relevant outcomes (e.g., cooperation)" (p. 813). In other words, lower levels of individualism and higher levels of collectivistic (collaborative) behaviour showed higher levels of cooperation.

Within medical education, Palmer (1998/2007) similarly found that competition decreases cooperation among medical students. He states that competition realigns outcomes when the act of serving patients is transformed from working as a community to meet clients' needs to working against colleagues "to win at the expense of one another" (p. 128). His research showed that once the culture shifted to a community focus, the medical students started working together to meet the patients' needs. Further to this, Tapola (2011) found within a teacher education program a culture where

competitive strategic actions among teacher educators (half of whom were full or associate professors) resulted in “winning benefits at others’ expense” (p. 1249).

These noneducational based findings are echoed in Cutcher’s (2009) research on a credit union. In this case, a sales strategy changed the organization from a customer-focused community culture to a sales-focused individualized culture. This resulted in a cultural shift where employees no longer worked together to meet the customers’ needs. Instead, the sales strategy of providing financial incentives to the employees with the most lucrative sales results caused employees to compete for customers. In the case of the credit union, management (and the sales strategy) failed to identify “deep connections their employees had with each other and with the members of the credit union” (Cutcher, 2009, p. 285). In these various cases cited above, a shift in the cultural environment toward reinforcing competition between individuals overrode cooperation within the group.

As teachers move from working as isolated individuals to becoming interdependent colleagues, there is a need for more cooperation among colleagues and less competition within schools (Sahlberg, 2011). When examining cooperative, competitive, and individualistic efforts in more than 1,200 research studies over the past 11 decades, the social interdependence theory has been validated to show the benefits of interdependence in interpersonal relationships while engaging in cooperative learning (Johnson & Johnson, 2009). Consequently, increased competition among collegial peers can interfere with the collaborative process (Levin, 2001). When teachers collaborate, they need to feel secure enough to take risks because they are being asked to declare "their professional practices openly, to go public about things they do not know, to learn

new things all the time, and to change their instructional repertoire regularly" (Mitchell & Sackney, 2009, p. 43).

Teacher collaboration is about relationships between colleagues. Collaborative cultures do not take over "other people's agendas and purposes" (Hargreaves & Fullan, 2012, p. 113) but instead honour the purposes, values, and relationships between and among collaborative colleagues. A basic "platform of secure relationships" (Hargreaves & Fullan, 2012, p. 113) needs to be in place for teachers to be comfortable with sharing and debating with colleagues.

Building teachers' collaborative cultures takes time because it means teachers take risks in being open about their teaching practices and in being professionally judged by their peers. In authentic collaboration, teachers feel comfortable in sharing more of their teaching practices without having to worry about being judged by colleagues. "Collaborative cultures take much more time, care, and sensitivity than speedily implemented changes or hurried assembled teams allow" as "building collaborative cultures is a patient developmental journey" (Hargreaves & Fullan, 2012, p. 119). Without the levels of trust and time needed to build relationships, "challenging or courageous conversations" (Hargreaves & Fullan, 2012, p. 113) among teachers regarding their practices will unlikely occur and conservatism in practice will likely remain.

Barriers to Teacher Collaboration

Teachers confront many time and work demands that place barriers in the implementation and sustainability of collaborative learning communities. The cumulative and intensifying effects of successive prescribed reforms increase demands on teachers'

time, thus displacing informal, spontaneous collaborations with what Sennett (1998) refers to as a "turnstile world" (p. 112) of transient teamwork or managed collaboration "where teachers frantically rush through meetings to dispatch the requirements of reform implementation" (Hargreaves & Goodson, 2006, p. 34). Even though collaboration is seen as a way to distribute work and reduce duplication, exploring and negotiating these conditions take a great deal of time (Lasker, Weiss, & Miller, 2001). This extra time and workload requirement can be a significant cause of teachers' work intensification (Datnow, 2011; Hargreaves & Goodson, 2006; Johnson, 2003; Kougioumtzis & Patriksson, 2009; Valli & Buese, 2007). When allocating time within the instructional day, Hargreaves and Fullan (2012) state that "planning periods" may not be the best time for teachers to work together as these periods tend to be "fairly short" (p. 124). Other teacher responsibilities, like supervision duties and attending to classroom and student demands, tend to take time away from these collective meetings (Hargreaves & Fullan, 2012).

In order to honour the importance of teacher collaboration, it is essential to recognize collaboration with structures, such as time, space, materials, and expertise (Hord & Tobia, 2012), for it to happen. Without these important structures, these barriers will continue to challenge the sustainability of teacher collaboration in school settings. The daily balance between classroom teaching and collaboration with colleagues is necessary for teachers to create their own school-based work and curriculum that meet the needs of their students in their schools (Sahlberg, 2011). In countries like Finland, Korea, and Japan, Sahlberg (2011) notes, instead of having teachers find time for

collaborative work, allocated time for working together is an inherent part of their daily professional schedules.

In some schools, teachers may associate with an isolated group of colleagues instead of with the school as a whole. In this case, collaboration faces barriers when teachers are "made up of separate and somewhat competing groups, jockeying for position and supremacy" in both teaching practices and resources (Hargreaves & Fullan, 2012, p. 115). Since these groups are insulated from the rest of the school, they may "reflect and reinforce very different outlooks on learning, teaching strategies, discipline, and curriculum" (Hargreaves & Fullan, 2012, p. 115). By taking collective responsibility for student learning and attending forums for cross-grade discussions, teachers may realign their perspectives to promote better "understanding and cooperation among colleagues" (Hargreaves & Fullan, 2012, p. 116).

Hord and Tobia (2012) challenge teachers to take charge of their collaborative learning communities and of their professional lives. However, Parker Palmer (1998/2007) suggests that teachers may be apprehensive of taking charge of the changes that can make the most difference to their teaching practice and their students' learning. This apprehension represents a further barrier to collaboration. By reclaiming the original intent of collaborative learning communities that focus on meetings as an opportunity to learn and refine their practice,

> teachers must take charge of that system of practice, the professional learning [communities] ... to make a real difference in how they operate as teachers so that student learning improves. As they take more control over their professional lives,

> the need for traditional employee unions and directives from politicians and supervisors begins to diminish. (Hord & Tobia, 2012, Kindle location 899)

Hargreaves and Fullan (2012) encourage teacher leaders to approach "their administrators to give them time to collaborate on learning agendas about which they are more knowledgeable than their principals" (p 129). By advocating for the time, space, materials, and expertise (Hord & Tobia, 2012) that support collaborative practices, teachers may be the change agents who build and sustain collaboration within their school settings.

The impact of teacher identity norms and collaboration on demographic variables, such as stage of career and gender, has been debated within the literature. For example, the literature shows that older teachers were “perceived as being less able to cope with the nature and volume of educational change ... less up to date in their subject knowledge, inflexible in their attitudes, [and] unwilling to adapt to change” (Redman & Snape, 2002, p. 356). In addition, Day (2002) states that the last 10 to 15 years of teachers' careers may be "the time of greatest conservatism'" (p. 62) but considers that age, life period, and years of teaching experience may "not be enough to explain how a teacher will participate" in professional development (p. 64). In the VITAE (Variations in Teachers' Work, Lives, and their Effects on Pupils) study, with 300 teachers in 100 schools, that examined influences in teachers' identities, Day, Sammons, Stobart, Kingston, and Gu (2007) found "little association between variations in teachers' overall view of CPD [collaborative professional development] and their age" (p. 2). The debate, thus, continues as to whether older, more experienced teachers may show higher levels of

individualism and conservatism and may not collaborate as much as their less experienced, younger peers.

In addition to stage of career, gender may impact how teachers interact with each other as "there are growing examples of collaborative work produced jointly by academics and teachers [that] is explicitly feminist, ... making the argument that the idea of collaborative conversation for learning is grounded in certain feminist principles" (Acker, 1995, p. 111). This could be interpreted that female teachers have more feminist based principles and, therefore, may be more collaborative than their male counterparts. Further research showed that gender configurations impact learning in collaboration as females are inclined to avoid conflict which "tends to be smoothed over rather than explored, thus inhibiting potential benefits from collaboration and the resulting cognitive conflict" (Van Meter, & Stevens, 2000, p. 116). By avoiding cognitive conflict, issues around challenging practices may not occur in female-only collaborative groups.

Building a Strong Collaborative Landscape

Teacher collaboration not only acts as a forum for implementing initiatives or developing teaching practices, but it also reinforces constructive collegial relationships that support a school's community culture. In addition, teacher collaboration supports new teachers by introducing them to the cultural norms and teaching practices in the school, thereby reducing teacher isolation and turnover (Darling-Hammond, 2010; Hargreaves, 1994; Little, 1990a). Teacher-initiated collaboration supports genuine dialogue between colleagues that can sustain an environment where teachers address practice-based problems and where deep sustained changes in teaching practice can be fostered (Hargreaves, 2000). Teacher collaboration is seen “as a means to counter teacher

isolation, improve teacher practice and student learning, build a common vision for schooling, and foster collective action around school reform" (Achinstein, 2002, p. 421).

Relationships within the Collaborative Landscape

Teacher collaboration promotes an environment of professional confidence that is needed to take risks when developing and introducing innovative teaching practices. In addition, within collaborative discussions, teachers adopt the confidence to critically consider innovations (Hargreaves, 1994). Teacher collaboration offers a forum for teacher reflection where "dialogue and actions provides sources of feedback and comparison that prompt teachers to reflect on their own practice" (Hargreaves, 1994, p. 246). In collaborative settings, teachers can "accumulate and circulate knowledge and ideas, as well as assistance and support, that help teachers become more effective, increase their confidence, and encourage them to be more open to and actively engage" in educational improvement and change (Hargreaves & Fullan, 2012, p. 114).

Hargreaves (2010a) stresses that teacher collaboration is a key ingredient in teachers' professional development. "Teachers can also only really learn once they get outside their own classroom and connect with other teachers: when they see beyond the immediate world that surrounds them" (Hargreaves, 2010a, p. 105). According to Mitchell and Sackney (2011),

> Learning is a collaborative process as the social arrangements and the academic discourse in the school generate a sense of interdependency, mutual obligations, shared commitments, and common understandings that are juxtaposed with individual perspectives, personal understandings, and unique knowledge bases and skill sets. (p. 149)

In addition to facilitating learning as a social process, teacher collaboration allows for teachers to learn from each other by sharing collegial expertise and pedagogy (Hargreaves & Fullan, 2012).

Teacher collaboration can contribute positively to teachers' work by encouraging "relationships of openness, trust, and support among teachers where they define and develop their own purposes as a community" (Hargreaves & Dawe, 1990, p. 227). In addition, Lortie (1975/2002) advocates for "more effective colleague relationships" that promote mutual trust and joint "responsibility for the performance of peers" (p. 238) in order to build opportunities for teamwork. In a trusting and respectful collaborative environment "that allow vulnerabilities to be voiced and doubts to be articulated," the "mobilization of [the] collective expertise and commitment" of teachers can change teachers' practices and students' lives (Hargreaves & Fullan, 2012, p. 114).

Teacher collaboration has many positive effects on school culture. It modifies authoritarian instructional cultures to become more student-centred and it increases teachers' authority in the governance of schools (Hargreaves et al., 2006; Vescio et al., 2008). School-based collaboration can enhance the occurrence of personalized interaction, decrease privatization of teaching practices, and reduce isolated subcultures of divisive teacher groups (Kougioumtzis & Patriksson, 2009). Privatization of teaching practices occurs when "innovative teachers who see themselves as being ahead of or above their colleagues can segment themselves in ways that hinder whole-school development" (Hargreaves & Fullan, 2012, p. 115). In these isolated subcultures, teachers can "generate squabbles over space (room allocation, storage space, online access), time (priority in scheduling), and resources (budgets, numbers of students in classrooms)"

(Hargreaves & Fullan, 2012, p. 115). When teachers engage in collective responsibility of students' learning through collaborative communities, joint work increases "understanding and cooperation" between groups (Hargreaves & Fullan, 2012, p. 117).

Leadership in the Collaborative Landscape

School leadership has a considerable impact on collaborative school cultures. School leaders are the key people who have the responsibility for building culture and who direct the processes and practices that create a collaborative landscape. Without organizational support found in the influence and guidance of school leaders, teachers who may desire to be collaborative with their peers could remain isolated within their teaching practice.

Traditional leaders, such as principals, are accustomed to being in control and to seeing the people they manage as subordinates, such as teachers, rather than partners (Lasker et al., 2001). In collaborative groups, democratic leaders understand that influence and power are shared (Lasker et al., 2001). Martin (2002) states that when leaders take control it can be the “death of collaboration” (p. 61) as this style of leadership elicits passivity and submission of subordinates. In addition, subordinates tend to relinquish more of their responsibility by distancing themselves from collaborative work. When administrators try to control the collaborative process, they need to consider whether they are doing it to meet the needs of the teachers or their own need to control the process.

If leaders are to foster collaboration, they must first change their own attitudes towards leadership. The 'authentic leadership' movement is based on the idea ...

> [that] an attitude of servant leadership is necessary ... by relinquishing some of the power one has in order to empower others. (Piercey, 2010, p. 56)

Hargreaves and Fullan (2012) note that, "when collaboration is left strictly to teachers [and not guided by administrators], it can lack bite. In the end, somebody has to lead collaboration, and neither group should ignore or override the other" (p. 125). When administrators make sure that the collaborative needs of teachers are met, such as the necessary structures like time within the instructional day, then maybe teachers will have better success in collaborating. As Greenleaf (1977) observes, "The servant-leader is servant first ... to make sure that other people's highest priority needs are being served" (p. 27).

Louis and Kruse (1995) point out that leaders "pay little attention to helping individual teachers improve their classroom skills" (p. 214). Instead, by using a one-size-fits-all approach leaders typically treat the professional growth of all teachers, experienced or inexperienced, the same. Further, without opportunities for consultation or feedback, teachers have little opportunities to develop their professional knowledge and practice. Louis and Kruse stress that "leaders need to provide attention to individual teacher development in their particular classrooms ... [where teachers] can rely on others within and outside the school ... and for teachers to feel comfortable asking for and receiving help as individuals" (p. 215). In order to build collaborative communities, the authors suggest the following structures: "time to meet and talk, physical proximity [to peers], interdependent teaching roles, communications structures and networks, and teacher empowerment and school autonomy" (Louis & Kruse, p. 236).

Distributed leadership within school organizations is evident when the responsibility for making decisions and developing strategic initiatives is shared by both teachers and administrators (Mintzberg, 2004). However, several theorists, such as Anderson and Grinberg, (1998), Hargreaves (1991), and Johnson (2003), see problems with the concept. Johnson, for example, views distributed leadership as a way to contrive and manipulate the use of "collaboration as a managerial tool of control" where organizations "position site-based 'shared leadership' and teacher collaboration as 'disciplinary practices' that discipline participants through self-regulation" (p. 339, quotes in original). With a disciplinary approach to shared leadership, teacher collaboration becomes a form of controlled self-regulation where teachers are controlled by group rules and norms that were created by others situated outside the group, thus turning it into managed collaboration. By "producing internalized controls," organizational leaders ensure "that performance indicators and other targets are met" (Ozga & Walker, 1995, p. 37). This managed collaboration means that administrators and teachers have little choice in implementing these downloaded initiatives as there is little democracy or professional judgment left in the process. "Power relations between principals and teachers are being constructed through the implementation of externally mandated 'line management' tasks" (Johnson, 2003, p. 339) in meetings meant to train teachers to follow the "blueprint" on how to develop and "receive" their collaborative culture (Cooper, 1988, p. 47, as cited in Hargreaves, 1991).

When administrators manage collaboration through externally situated group rules and norms, levels of competition increase as teachers vie for recognition (Johnson, 2003). When they manage through principal-teacher power relations, levels of cooperation in the

school cultures decrease (Johnson, 2003). For example, when power relations are distributed to some but not all teachers within school cultures, cultural divisions occur among colleagues as some teachers have more influence than others in decision making, further decreasing the school's overall capacity to collaborate. By contrast, in the process of teachers negotiating their own group rules and norms, levels of cooperation increase as the group builds cohesion (Johnson, 2003). This process develops relationships and interdependence among colleagues, thus making it an important factor in building teacher collaboration. Therefore, sustaining a group's autonomy in managing their own dynamics means that teacher groups can build their collaborative knowledge and capacity without being given rules on how to collaborate.

Administrators build capacity within schools by promoting a sense of community and mutual accountability, by communicating expectations, and by discussing instructional practices in order to improve student achievement (Weathers, 2011). Yet, strong administrative, district, and government intervention reforms may yield short-term improvements in schools and their communities, as "top-down management, standards, and accountability policies are the antithetical to teacher communities" (Weathers, 2011, p. 1), as they may "reinforce cultures of dependency among teachers" (Hargreaves, 2004, p. 32). Furthermore, imposed reforms can endanger the prospects of "long-term capacity-building and making sustained improvements over time" by limiting teacher-led innovation (Hargreaves, 2004, p. 32). Professional teacher dependency is a result of continuous top-down initiatives that are driven by governments and districts instead of encouraging teachers to use their own self-directed learning and collaboratively developed innovations to build school capacity. Teachers' dependency on reforms can

"stunt creativity" in school systems (Hargreaves, 2010a, p. 115). In this environment, teachers move from using their professional judgment to improve classroom practice to waiting for the next reform to tell them how they should teach.

Strong leadership can offer guidance and support to collaborative learning communities. In a quantitative study of resource-constrained primary schools in rural China, Sargent and Hannum (2009) found that strong principal leadership accounted for a "34% increase in the probability of collaboration" occurring among teachers (p. 271). In this study, leadership supported "the culture and the organizational mechanisms by which teachers talked about teaching and learning" (p. 261), such as allowing teachers to "participate in management decisions," emphasizing "the importance of cooperation between teachers," and encouraging a "range of different teaching strategies" (p. 263). This study showed that teacher collaboration occurred when administrators provided structures that support collaborative cultures. Piercey (2010) hypothesized that better teacher collaboration results from leaders also demonstrating "some common understanding" of the nature of collaboration and "some significant attitudinal shift" in how leadership should serve the collaborative process (p. 56). Principals who facilitate teacher collaboration can promote the sharing of ideas that "increase the probability of shared school-wide goals" (Rosenholtz, 1989, p. 15). In a quantitative study, using data from the National Center for Education Statistics' (NCES) Schools and Staffing Survey, Weathers (2011) found that "principal leadership has a very strong positive effect on teacher community - the strongest effect of any policy-amenable variable" (p. 1). Significant principal actions included "recognizing teacher effort and communicating expectations; and a principal's direct efforts to build community among teachers"

(Weathers, 2011, p. 1). Administrators can reduce the ambiguity and complexity of collaboration by loosely defining team structures, common goals, and task purpose (Sargent & Hannum, 2009; Louis & Kruse, 1995; Weathers, 2011). Leaders can also play a critical role by nurturing collaborative culture norms based on the social hallmarks of trust, mutual respect, interdependence, and cooperation. Weathers states that "part of what is important in the leadership process is fostering norms within the community that encourage a sense of mutual accountability, cooperation, and trust within an organization" (p. 9). Mitchell and Sackney (2011) agree:

> Principals and other administrators play key roles in shaping interpersonal dynamics and power relations in a school, and their roles are crucial to the development of a community where processes and practices are directed toward teaching and learning and where relationships are mutual, interdependent, and responsive. (p.108)

As trust is difficult to foster in a hierarchal system where teachers are being assessed by principals, administrators who can get "behaviours going that demonstrate trust, and building new norms founded on trust, are perhaps the best ways to increase trust" in collaborative relationships (Hargreaves & Fullan, 2012, p. 114).

Teachers are traditionally assessed by their administrators on how they perform within their classrooms. Report cards, meeting attendance, engagement with parents, professional development, and even extracurricular activities can provide artifacts to how effective teachers are in their practice. But "performance demand is for competent classroom practice, rather than for systematic reflection on and the defense of assumptions underlying that practice" (Timperley & Robinson, 2000, p. 59). In other

words, teachers' performances are based on what happens in their classrooms and not how they interact with colleagues within and beyond their schools. Instead of seeing their practice through the lens of their colleagues, school, or board, this approach to performance limits teachers' views of their work to the boundaries of their classroom door. A "reformulation of what it means to be collegial" and what it means to be a teacher in a school is needed, where "collegiality means working together supporting one another" when "taking responsibility" for school issues by jointly advocating to resolve them (Timperley & Robinson, 2000, p. 59) that go beyond their classroom door. By establishing teacher performance assessments that are based on the idea of supportive mutual collaboration, administrators stress the importance on school issues over individual classroom issues. This moves teachers' practices from being less individualistic, classroom based to more interdependent collegial based, thus changing the concept of what encompasses the work of teachers.

Establishing an environment that is conducive to building and sustaining teacher collaboration requires a balance in various aspects of school life. For example, collaborative teacher groups need a common administrative-guided structure in order to promote positive and fruitful group efforts (Crafton & Kaiser, 2011; Little, 1990b), but highly controlled administrative environments are incompatible with the spontaneous, voluntary, and unpredictable nature of teacher collaboration (Datnow, 2011). Too much structure and control has a detrimental effect by “constraining teachers’ development of personalized instructional strategies or co/re-construction of knowledge grounded in action” (Butler, Lauscher, Jarvis-Selinger, & Beckingham, 2004, p. 452). In addition, too much administrative control can turn teacher collaboration into "contrived collegiality"

(Hargreaves & Fullan, 2012, p. 119). When left strictly to teachers, too little structure or leadership can turn collaboration into a directionless process (Hargreaves & Fullan, 2012). To sum up, districts and administrators must provide enough structure and support in the form of resources and guidance to maintain teachers' collaborative efforts but not too much to create professional dependence (Butler et al., 2004; Graham, 2007; Hargreaves & Fullan, 2012; Scribner, Sawyer, Watson, & Myers, 2007).

Chapter Summary

In the last 10 years, there has been a systemic push towards developing teacher collaborative communities as a vector for school-based reform. Despite the continued promotion of these communities, the sustainability of collaborative communities in schools remains a challenge. As teacher collaboration can vary in definition, it can mean many things in various contexts. Since it is teacher collaboration that translates policy into practice, it is important to identify the elements that support collaborative cultures in schools.

Teacher collaboration is a complex endeavor. Before trying to manage teacher collaboration, it is important first to understand its meaning, complexity, and various forms. Collaboration needs to be informal and unstructured as imposing formal structures on collaborative practices can lead to contrived collaboration. Ideally, collaboration should be focused on the developing, planning, and assessing teaching practices to meet students' needs (Lortie, 1975/2002).

Teacher collaboration supports the culture of schools, improvements in teaching and learning, the changing of teachers' practices, and the implementation of school-based and policy-directed reforms. By understanding how and why teachers collaborate,

structures and supports can be put into place to reinforce and sustain collaborative cultures.

The teacher identity norms of conservatism, innovation, individualism, interdependence, competition, and cooperation appear to have an impact on collegial collaboration in organizations. The research dealing with these norms tends to be qualitative in nature and focused on the negative impact conservatism and individualism has on collaboration in schools. Research on cooperation deals specifically with the building of peer relationships and student achievement when learning cooperatively in groups. From outside the educational landscape, research shows that competition negatively impacts collaboration, cooperation, interdependence, and organizations' cultures.

Barriers to building teacher collaboration in schools include (a) the impact of cumulative reforms, (b) the insufficient time allocated to support collegial interactions, (c) the lack of balance between classroom practice and collegial collaboration in teacher's timetables, (d) the competing subcultures of teachers and teacher groups, and (e) the need for more advocacy by teachers for collaboration with their colleagues.

Teacher collaboration contributes to schools' cultures by (a) supporting collegial relationships, (b) encouraging genuine practice-based dialogue and problem solving, (c) promoting professional confidence and risk taking, (d) supporting the performance of peers, (e) increasing teachers' authority in the governance of schools, and (f) focusing on the diversity of students' and schools' needs.

School leadership has considerable impact on how collaborative school cultures are developed and sustained. It is administrators who set the framework for collaboration

among colleagues as they shape the interpersonal dynamics and power relationships. By allowing teachers to develop their own groups and norms that promote trust and sharing among colleagues, principals can foster cooperation and interdependence and can make sustained collaboration a routine part of teachers' practices.

CHAPTER THREE: METHODOLOGY AND PROCEDURES

In this research study, I investigated the relationships between teacher identity norms and collaboration in teachers' practices in public elementary schools in Ontario. In this chapter, the research design and methodology used to collect and analyze data will be outlined. The chapter will establish methods and choices used to conduct the pilot study and the main study.

The purpose of this inquiry was to investigate how teacher identity norms related to teacher collaboration within schools in Ontario. The literature highlighted three clusters of teacher norms that may impact collaboration: (a) conservatism and innovation, (b) individualism and interdependence, and (c) competition and cooperation. Using quantitative methods, the relationships between and among these norms and their relationships with collaboration were investigated.

Research Design and Methodology

The purpose of the research was to collect quantitative data measuring teachers' attitudes and practices in order to provide "an explanation of the relationships among variables" (Creswell, 2008, p. 51). The variables examined dealt with teacher identity norms and collaboration. According to Creswell, "the literature in a quantitative study both documents the need to study a problem and provides direction for the research questions" (p. 54). Since the literature accentuates a lack of quantitative data on how teacher identity norms impact collaboration, the quantitative research approach was chosen in order to address this gap. Creswell further explains:

> In quantitative research, [the researcher] asks specific, narrow questions to obtain measurable and observable data. The major statements and questions of direction

> in a study - the purpose statement, the research questions and the hypotheses - are specific and narrow because [the researcher] identifies only a few variables to study. (p. 54)

I followed Creswell's (2008) advice by using narrow research questions to specifically examine the relationships between teacher identity norms and collaboration. The hypotheses were developed to address the research questions regarding the relationships between and among teacher identity norms and collaboration. "From a study of these variables, [the research] obtains measures or assessments on an instrument" (Creswell, 2008, p. 54). Using a survey to collect the data, the research used correlational research design in which

> Investigators use a correlation statistical technique to describe and measure the degree of association (or relationship) between two or more variables or sets of scores. In this design, the researchers do not attempt to control or manipulate the variables as in an experiment; instead they relate, using the correlation statistic, two or more scores for each individual. (Creswell, 2008, p. 358, brackets in original)

The study consisted of two stages: a pilot study with 50 participants, using a paper questionnaire, and main study with 175 participants, using a refined online survey. The research approach used a cross-sectional design where "respondents are asked questions at one point in time. These designs can be likened to a single snapshot from a camera, as compared to a continuous longitudinal view provided by a motion picture" (Gray & Guppy, 2003, p. 56). The main survey data were collected between November 2013 and January 2014.

The following questions guided the data collection and analysis: How do teacher identity norms correlate with teacher collaboration? What relationships are evident among teacher identity norms? To answer these research questions, the following hypotheses were tested:

Hypothesis One: Teacher identity norms will correlate with teacher collaboration

Hypothesis Two: Teacher identity norms will correlate with each other.

It was hypothesized that teacher identity norms, such as individualism, for example, will correlate, either positively or negatively, with teacher collaboration. In this research, an instrument was developed to measure the specific variable of collaboration with respect to the variables of teacher identity norms. Three clusters of variables of teacher identity norms of conservatism and innovation, individualism and interdependence, and competition and cooperation were selected to examine the relationship with actual and desired collaboration.

The literature debates the impact of years of teaching and gender on collaboration and teacher identity norms among teachers. To complement the main correlational research approach, demographic data were used to investigate the following research question: What impact do the demographic characteristics of career and gender have on teacher identity norms and on teacher collaboration? To answer this question, the following hypothesis was tested:

Hypothesis Three: Teachers' stage of career and gender will affect collaboration and teacher identity norms.

Demographic data were collected from the sample to determine the nature of the participants who participated in the survey and to test the hypothesis relating to the impact of teaching and gender.

In order to test the hypothesis that stages of teaching career may impact collaboration and teacher identity norms, participants were grouped into three categories based on equivalent teaching experience: early career teachers (zero to 5 years), middle career teachers (6 to 20 years), and late career teachers (21 years and over). To test for the impact of years of teaching, an Analysis of Variance (ANOVA) was conducted to determine if there was a statistically significant difference between collaboration and mean levels of teacher identity norms across the three categories of teaching experience. In order to test the hypothesis that gender may impact collaboration and teacher identity norms, independent samples t-tests were conducted to determine if any differences existed between the practices of female and male participants.

For reporting and evaluating research, quantitative methodology tends to use a standard format of "introduction, review of literature, methods, results, and discussion" (Creswell, 2008, p. 58). The use of rigorous, impartial data collection and the appropriately applied statistical procedures imply a reduced researcher bias. These procedures "ensure that [the researcher's] personal biases and values do not influence the results" (Creswell, 2008, p. 58). This was the format followed in this report. By developing an instrument on the basis of the literature and refining it on the basis of exploratory factor analysis of pilot-study results, the study provided a level of statistical reliability and validity in the data. In addition, the design of the study controlled the variables that might introduce bias into the data. In the case of this study, the design was

limited to specific variables. To report the results in quantitative research, "researchers tend to take an objective and unbiased approach" (Creswell, 2008, p. 58). The results were reported with minimal personal bias as statistical analyses were selected to test the hypotheses and there was no attempt to arrive at anticipated results.

Pilot Study and Instrument Development

Survey methodology typically relies on a standardized data collection instrument. Creswell (2008) defines an instrument as "a tool for measuring ... quantitative data ... [that] contains specific questions and responses ... [that is developed] in advance of the study" (p. 55). Since I was unable to locate an instrument to investigate the norms of interest, an original instrument was developed by means of identifying potential survey statements from an examination of the issues and concepts in related literature. This yielded 84 pilot study statements addressing issues drawn from the literature on teacher collaboration and the norms of interest.

The purpose of the pilot study was to collect data with an 84 statement questionnaire and to subject the data to exploratory factor analysis in order to develop a reduced, statistically tested instrument (see Appendix B). Data from this pilot study were used to decrease the number of attitudinal statements in the instrument. In order to avoid "participant fatigue" (Creswell, 2008, p. 171), the length of the survey and the ease of completion was considered. Limiting the number of statements or questions within an instrument is important to encourage participants to complete the survey. In this research, a goal was set to limit the refined instrument to a reduced number of attitudinal statements that ensured ease of survey completion for participants.

The pilot study consisted of data collected from 50 participants who responded to 84 attitudinal statements and demographic information. The attitudinal statements had been developed from an analysis of the trends, issues, concepts, and debates apparent in the literature on teacher identity and collaboration. The demographic questions were developed in relation to common demographic aspects of the teaching population. A paper questionnaire was selected for ease of distribution and collection. Participants in the pilot study were elementary teachers drawn from one urban Ontario school board. It was important to include the teacher participant demographics of the pilot study data in order to consider how closely the sample data represented the population of elementary teachers in Ontario. In the pilot study, a total of 48 teachers (96% of participants) were full-time permanent contract teachers with the remaining two teachers (4% of participants) classified as part-time permanent contract teachers. Thirty-eight participants (76%) identified as female, and 12 participants (24%) identified as male. Note that the Elementary Teacher Federation of Ontario (2013), who represents permanent contract elementary teachers in Ontario, indicated that consistent statistics show 82% of their membership as female. Thus, the sample for the pilot study with 76% female participants is reasonably representative of the population of elementary teachers in Ontario.

Pilot-study participants indicated their current teaching assignments to be as follows: 11 primary (junior kindergarten to grade 3; 22%), four junior (grades 4 to 6; 8%), 19 intermediate (grades 7 to 10; 38%), five special education (10%), three itinerant/resource (6%), with eight of participants (16%) indicating a variety of other assignments. This showed that data from the participants represented teachers in a wide variety of teaching positions. The mean years of teaching experience was 13.54 years

with a standard deviation of 8.04 years and a range of 1 year to 37 years taught. Population data for the years of teaching demographics were not readily available.

Exploratory factor analysis of the pilot study data was performed in order to reduce the large number of attitudinal statements. Exploratory factor analysis (EFA) is a statistical method used to identify underlying relationships between measured variables (Norris & Lecavalier, 2010). According to Field (2000), factor analysis enables a researcher to determine the unique dimensions that an instrument measures:

> The existence of clusters of large correlation coefficients between subsets of variables suggests that those variables could be measuring aspects of the same underlying dimension. These underlying dimensions are known as *factors* (or *latent variables*). By reducing a data set from a group of interrelated variables into a smaller set of *uncorrelated* factors, factor analysis achieves parsimony [frugality] by explaining the maximum amount of common variance in a correlation matrix using the smallest number of explanatory concepts. (p. 423)

In other words, the purpose of exploratory factor analysis is to identify the distinct dimensions in an instrument and to reduce the number of uncorrelated factors by determining the maximum amount of numerical calculations that represents the smallest number of uncorrelated factors. When factors are distinct, they do not align or significantly correlate with other factors, which is shown in a matrix table displaying correlation coefficients and loading factors. Field explains, "The co-ordinate of a variable along a classification axis is known as a *factor loading*. The factor loading is, therefore, the Pearson correlation between a factor and a variable" (p. 425). In other words, the items on the instrument that measure similar concepts, like innovation within

teachers' practices, will be listed together as belonging to a factor that could be labeled as, for example, *Innovation*. In this study, the pilot instrument with 84 attitudinal statements measuring 22 factors was ultimately reduced to 20 attitudinal statements measuring six factors.

To perform the exploratory factor analysis, eigenvalues over 1.0 were extracted and the maximum iterations for convergence were set at 25. In other words, eigenvalues were extracted when statistical results were over 1.0 and the maximum amount of times the calculations were repeated in the analysis was set at 25 times.

> Eigenvalues are designed to show the proportion of variance accounted for by each factor. The first eigenvalue will always be largest (and always greater than 1.0) because the first factor (by the definition of the procedure) always explains the total amount of variance. (George & Mallery, 2011, p. 247)

Varimax rotation was used with a display of rotated solutions and loading plots. The Varimax is recommended by Field (2000) as it simplifies the interpretation of data. Varimax rotation "attempts to maximize the dispersion of loadings [of variables] within factors. Therefore, it tries to load a smaller number of variables highly onto each factor, resulting in more interpretable clusters of factors" (Field, 2000, p. 449). In other words, it rotates the graph of the loading plots so it is easier to isolate factor data clusters in the graph and in the factor analysis table.

Factor scores were determined by the Anderson-Rubin method. The Anderson-Rubin method "produces factor scores that are uncorrelated and standardized (they have a mean 0, a standard deviation of 1.0) ... the Anderson-Rubin method is best when uncorrelated scores are required" (Field, 2000, p. 431) like those used in factor analysis.

Field indicates that this method is best when determining "a composite score for each individual on a particular factor" (p. 431).

The loading factor display format was initially suppressed with absolute values of less than 0.5. This means that any loading factor that measured less than 0.5 were excluded (left blank) in the factor table. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) is a test that indicates "multivariate normality and sampling adequacy (the adequacy of your variables for conducting factor analysis)" (George & Mallery, 2011, p. 252). The KMO number indicates whether there are adequate patterns of correlation across variables within each factor and adequate levels of distinct and reliable factors in exploratory factor analysis. If the KMO test shows no levels or low-level numbers, then the factor analysis is showing no distinct and reliable factors. This means that the number of items within the data needs to be reduced until the KMO levels start to present in the higher range. In other words, trying to isolate a great many factors in data would result in a very low or no KMO output. KMO "values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and values above 0.9 are superb" (Field, 2000, p. 455).

While performing exploratory factor analysis, the goal is to reduce the number of factors until the output starts to show specific, uncorrelated factors in a correlation matrix. The first factor analysis generated 22 separate factors and failed to produce a KMO number and a rotated matrix table. This result indicated that there were too many factors and too little correlation among the data from the 84 attitudinal statements. Following Field's (2000) range of acceptance for KMO values, all survey attitudinal statements that showed factor loading numbers of less than 0.5 levels of correlation were

deleted. Field suggests that if this occurs, the variables (i.e., the attitudinal statements) that show loading factors of less than 0.5 should be removed in order to increase the likelihood of greater correlation between the reduced set of data for each attitudinal statement. Field explains, "If you find any variables with values below 0.5 then you should consider excluding them from the analysis (or run the analysis with and without that variable and note the difference). Removal of a variable affects the KMO statistics" (p. 456). After removing the statements that did not meet Field's standard of 0.5, a second factor analysis presented a matrix with fewer factors and a KMO statistic. Item deletion and factor analyses were conducted until the KMO indicated a level of 0.725, which resulted in 20 attitudinal statements that measured six factors (or teacher identity norms). This was a good result as it reflected the specific teacher identity norms drawn from the literature. When variables (i.e., attitudinal statements) were reduced further, the KMO number began to decrease falling below a KMO output of 0.7, which showed that the factor analysis yielding the KMO of 0.725 was at the optimal level for isolating teacher identity norms. With the value of KMO falling between 0.7 and 0.8, it met Field's criterion for a good number of variables (i.e., attitudinal statements). This meant that data from 20 attitudinal statements representing six factors indicated the best possible level of correlation within the data.

To check the results of the exploratory factor analysis from the pilot data, a second factor analysis was performed for the large on-line survey sample (n=175). This analysis showed similar results to the pilot study analysis. The 20 statements clustered as follows: interdependence (4 statements), individualism (3 statements), conservatism/ innovation (6 statements), and competition/cooperation (6 statements) with factor loading

values between 0.48 and 0.815. One statement, "I feel professionally isolated from my colleagues," clustered with the competition cluster instead of the individualism cluster. This factor analysis had a KMO of 0.811, which based on Field's (2000) criterion is considered a "great" result (p. 455).

As the variables were removed on the bases of the factor analyses, the statements measuring collaboration were all excluded as they did not meet Field's (2000) standard of 0.5 and lacked distinct dimensions. This was because the statements measuring collaboration showed multiple correlations with the statements measuring the six factors (i.e., teacher identity norms). Since the research design hypothesized that collaboration correlated with variables of teacher identity norms, the lack of discrete correlations among the statements measuring collaboration may indicate a level of dependence of collaboration on teacher identity norms. By statistically excluding statements measuring collaboration, the relationships between collaboration and teacher identity norms could not be explored because of their multiple areas of correlation with other factors. Field notes that "factor analysis is an exploratory tool and so it should be used to guide the researcher to make various decisions" (p. 458) by reducing the number of factors within the data and that researchers should not "leave the computer to make [these decisions]" (p. 459). In other words, when using exploratory factor analysis to develop an instrument, the researcher must interpret the results appropriately in order to determine the design of the instrument. The purpose of this study made it impossible to exclude the statements measuring collaboration, even though these variables had been excluded during the factor analyses. Consequently, variables measuring types of collaboration were reinserted in the instrument.

To summarize the exploratory factor analysis, 20 attitudinal statements were selected to measure the six teacher identity norms of conservatism, innovation, individualism, interdependence, competition, and cooperation. These 20 attitudinal statements were used in the refined instrument. Two statements measuring collaboration were selected based on the highest levels of factor correlation for collaboration in the factor analysis. The first statement indicated teachers' desired preferences for collaboration while the second statement actual collaboration.

In the refined instrument, the attitudinal statements measuring teacher collaboration and identity norms were distributed across the instrument in the following way: Collaboration was measured by statements 1 and 2; cooperation was measured by statements 3, 4, and 11; competition was measured by statements 6, 8, and 17; interdependence was measured by statements 5, 7, 9, and 18; individualism was measured by statements 10, 13, 16, and 20; innovation was measured by statements 12, 14, 19, and 22; and conservatism was measured by statements 15 and 21. This resulted in a final instrument with 22 statements: 20 measuring teacher identity norms and two measuring collaboration (see Appendix C for a copy of the online survey). The refined instrument also collected demographic data regarding each participant.

In order to measure internal reliability of the large online survey data (n=175), Cronbach's Alpha scores were calculated for each of the 22 statements. Based on the statement data measuring the subscales of cooperation, competition, interdependence, individualism, innovation, and conservatism, the Cronbach Alpha scores showed good levels of internal consistency above 0.7 (Field, 2005; Nunnaly & Bernstein,1994). The specific results were as follows: interdependence ($n = 4$, $\alpha = .862$), individualism ($n = 4$,

α = .673), and innovation (n = 4, α = .750). Other statements that did not meet the criterion of α = 0.7 showed the following levels of internal consistency: cooperation (n = 3, α = .409), competition (n = 3, α = .488), and conservatism (n = 2, α = .519). In addition, Cronbach Alpha scores were calculated for statements measuring norms that correlated with actual and desired collaboration. The data measuring actual and desired collaboration with the norms of cooperation and interdependence had high alpha scores of .820 and .805 respectively.

Site and Participant Selection

Since elementary teachers work in a number of different locations across Ontario, each school and each board has its own unique culture and setting. To take this diversity into account, the study was designed to draw on a sample of participants teaching in urban (including suburbs), rural, and Northern Ontario settings. Having participants drawn from these unique areas of Ontario meant that measures of teacher identity norms and collaboration may better reflect the population of elementary teachers across Ontario. A total of 21 boards of education were contacted for participation in this study. Of these, seven boards of education agreed to sponsor this research: two urban boards, two rural boards, and three Northern Ontario boards. The nature of the sponsorship resulted in the boards providing potential teacher participants with a direct link to the online survey through an email or an electronic broadcast.

This study was limited to investigating collaboration among permanent contract-status elementary teachers in public schools in Ontario. Since the literature shows that secondary school teachers tend to be less collaborative than their elementary colleagues (e.g., Timperley & Robinson, 2000), only elementary teachers were selected so that the

nature of teaching in elementary vs. secondary schools was not an intervening variable. Further, temporary occasional contract teachers were exempt from the sample as their experience with collaboration may vary from their permanent colleagues with contracts and may not be statistically representative of the population of permanent contract teachers. In order to focus the study on teachers from one type of school board in Ontario, only English public school teachers were invited into the study. Hence, the study did not included teachers from Catholic, French, and private school boards.

Data were collected using an "impartial" (Creswell, 2008, p. 58) sampling that ensured the confidentiality of the participants. The participants were selected based on their willingness and availability to participate in the study, which is referred to as a "convenience sampling" (Creswell, 2008, p. 155). "In this case [of the convenience sampling], the researcher cannot say with confidence that the individuals are representative of the population. However, the sample can provide useful information for answering questions and hypotheses" (Creswell, 2008, p. 155).

A total of 231 participants completed the online survey. Of these participants, data from 52 participants were deleted from the sample as the participants identified themselves as secondary panel teachers or occasional, nonpermanent teachers. In addition, four participants who identified themselves as administrators (and not teachers) were also deleted from the sample size. In total, data from 56 participants were excluded from the sample as they were outside the scope of the study.

After these exclusions, the sample size consisted of data from 175 elementary, permanent contract status teachers with 164 (94.7%) participants serving on full-time permanent contracts and 11 (6.3%) participants serving on part-time permanent contracts.

A total of 147 (84%) participants identified as female and 28 (16%) identified as male. The Elementary Teachers Federation of Ontario (2013), which represents permanent contract elementary teachers in Ontario, indicated that statistics consistently show 82% of their membership as female. Thus, with respect to gender, the sample for this study, with 84% female participants, is reasonably representative of the population of elementary teachers in Ontario in terms of gender distribution.

The demographic data were examined to determine relationships between the teacher identity norms and collaboration and the stages of participants' careers. Within the literature, the definition of stages of early, middle, and late teaching career tend to vary (Bolam, 1990; Day et al., 2007; Huberman, 1995). For the purpose of this research, the stages of career were defined as: early career teachers (0 to 5 years of equivalent teaching experience), middle career teachers (6 to 20 years of equivalent teaching experience), and late career teachers (over 21 years equivalent teaching experience).

Data Collection and Storage

In the second phase of the study, the refined instrument was used to collect data to investigate the relationships between and among teacher identity norms and collaboration. Using an online survey format, the instrument asked teachers to respond to attitudinal statements that measured teacher experiences with teacher identity norms and collaboration. If participants did not know how to respond to a statement or they did not understand a statement or they did not want to respond to a statement, the participants had the option to indicate *no answer* on the online survey. When no response was selected by the participants, the online survey program automatically defaulted to *no answer* and was recorded as a blank.

The demographic data collected from participants included gender (female, male), type of current contract (permanent/contract full-time, permanent/contract part-time, and other), current teacher panel/union (elementary, secondary, and other), number of equivalent years teaching (in years), current teaching assignment in 2013/2014 (primary JK-grade 3, split/mixed primary/junior, junior grade 4-6, split/mixed junior/intermediate, intermediate grade 7-10, senior grade 11-12, high school grade 9-12, English-as-a-second-language (ESL), special education, ESL/special education, itinerant/resource, administration, library, and other), and type of school board (urban-city, urban-suburb, rural-town, rural-general, Northern Ontario, both rural and urban, and other). All demographic variables, except the number of equivalent years teaching, used categorical scales. For equivalent years of teaching, a ratio (or true zero) scale was used. This scale gave new teachers, without a full year of experience, the ability to indicate 0 equivalent years of teaching experience.

For the 22 attitudinal statements, data were collected using a 5-point Likert-type interval scale as follows: strongly agree (1), agree (2), neither agree or disagree (3), disagree (4), and strongly disagree (5). Creswell (2008) provides a description of this type of scale.

> The popular Likert scale illustrates a scale with theoretically equal intervals among responses. It has become common practice to treat this scale as a rating scale and assume that the equal intervals hold between the response categories. However, we have no guarantee that we have equal intervals. Hence, often the Likert scale (*strongly agree to strongly disagree*) is treated as both ordinal and interval data in educational research (hence the term *quasi-interval*) ... In order to

> consider treating Likert data on an interval scale, researchers should develop multiple categories or choices in their scale, determine whether their data are normally distributed, and establish whether the distance between each value on the scale is equal. (p. 176)

For the purpose of this study, the Likert scale was treated as an interval scale as there were multiple, symmetrical choices in both the pilot and main study instruments.

To support data analysis, mean scores for all attitudinal statements measuring specific teacher identity norms (e.g., innovation) were calculated. Creswell (2008) notes that mean scores are appropriate when a "response to single questions may not be reliable and may not accurately reflect an individual's score" (p. 185). He explains, "summed scores are the scores of an individual added over several questions that measure the same variable" (p. 186). In using summed scores, this method can help to "reduce biases and to increase reliability in single answer responses" (Creswell, 2008, p. 185).

Potential participants were informed about this research by their board of education through an email or electronic broadcast. From these two access points, potential participants were directed via an electronic link to the Brock University survey website (Faculty of Education Lime Survey or FOE Lime Survey). Potential respondent data were regularly viewed by the researcher and any data submitted by participants who were not permanent contract-status or elementary school teachers were deleted from the data sample. Data were collected from November 2013 until January 18th, 2014 in order to ensure that teachers from all boards of education had an adequate amount of time to complete the survey.

Data were collected by downloading participant data from the online survey site into an SPSS data base or Excel spreadsheet in password protected files. As Creswell (2008) explains, "Establishing a database of categories of information helps organize this information" (p. 178). A standardized codebook based on the categorical and continuous variables was located within the online survey program. According to Creswell, "A codebook is a list of variables of questions that indicates how the researcher will code or score responses from instruments or checklists" (p. 184). The survey automatically coded the data, in a standardized format, and when data were downloaded into SPSS, the codes remained with the data.

Data Processing and Analysis

Once the data were stored, the database was cleaned. "Cleaning the data is the process of inspecting the data for scores (or values) that are outside the accepted range" (Creswell, 2008, p. 189). This was done by sorting the data from largest to smallest to highlight any anomalies. Since the online survey program controlled the input of data, making the responses in the demographic section mandatory, this did not occur. An SPSS test was used to determine the location of any missing data and the percentage of missing data, and the mean for relevant attitudinal variables was used to replace missing data. As George and Mallery (2011) explain:

> For *continuous* data a frequent procedure is to replace missing values with the mean score of all other subjects for that variable. SPSS has a procedure that allows this type of replacement to occur ... Although replacing *many* missing values by these techniques can sometimes bias the results, a small number of replacements has little influence on the outcome of your analysis. An often-used

> rule of thumb suggests that it is acceptable to replace up to 15% of the data by the mean of values for that variable with little damage to the resulting outcomes. (p. 48)

The survey's 1.5% of missing data fell well within George and Mallery's 15% point of acceptability (p. 48) and it was assumed that the use of the variable mean would have a minimal impact on the results of the analyses.

Data were analyzed and interpreted using descriptive and inferential statistics. "These analyses consisted of a breakdown of the data into parts to address the research questions" (Creswell, 2008, p. 56). The statistical procedures examined similarities and differences between and among the variables to "provide information to address the research questions or hypotheses" (Creswell, 2008, p. 57). The analyses provided results to "either support or refute the expected predictions in the study" (Creswell, 2008, p. 57). For example, it was hypothesized in the study that there was a correlation between the teacher identity norms of conservatism and innovation. In this study, Pearson correlation analysis was performed to examine the relationships among the teacher identity norms.

In addition to correlation analysis, the data were examined to investigate effects of demographic variables. Analytical tests in this research included statistics summarizing the participants' demographic characteristics and the frequency of data for the statements measuring teacher identity norms and collaboration. Inferential statistics included an analysis of variance (ANOVA) for the impact of years of teaching on teacher identity norms and collaboration. In addition, independent samples t-tests were run to compare the means of levels of teacher identity norms and collaboration between the male and female gender groups.

Assumptions and Limitations of the Methodology

Reliability and validity can be limited by socially influenced responses. Participants in this study may not have responded to the statements honestly as they may not have wanted to admit to some practices such as not wanting to have colleagues watch them teach. Instead, participants may have responded to the attitudinal statements in a socially desirable way. This response bias "occurs in survey research when the responses do not accurately reflect the views of the sample" (Creswell, 2008, p. 646). As this research relied upon the self-reported data of the teacher respondents, it may contain the biases that are inherent in self-reported data.

The online instrument was designed to ensure confidentiality since no participant's data contained any personal identifiers. With this level of confidentiality, the participants could feel comfortable in responding to the survey honestly, without the social influence of others. In addition, several attitudinal statements measured the same teacher identity norms. Using multiple indicators to measure concepts can also limit any social influence in responding to the attitudinal statements. Using “multiple indicators means that the random errors that are part of any single measure have a better chance of being cancelled out by random errors in other indicators” (Gray & Guppy, 2003, p. 73). Multiple indicators allow researchers to make more precise distinctions between variables because more information is available for each variable.

The confidential nature of the survey did not limit teachers in participating in this study since different boards presented the survey link through different formats. Thus, the survey varied in its level of coverage across the boards of education. It therefore cannot be stated that the participants worked in the participating boards of education. Due to

these limitations, statements can only be made regarding the teacher participant sample based on how the participants filled out the survey. For example, 84.0% of participants identified as female and 81.1% of participants identified as working in a board of education in an urban setting. In other words, statements that the sample data are precisely representative of the Ontario elementary teacher population cannot be stated.

This study was limited to an investigation of teacher collaboration as related to teacher identity norms. Dickson and Mitchell (2014) highlight three areas of capacity that impact learning communities: personal capacity, interpersonal capacity, and organizational capacity. This study is set within the framework of personal and interpersonal capacity and thus did not examine the influence of organizational capacity. The literature cites the teacher identity norms of individualism and conservatism (Hargreaves & Fullan, 2012; Hargreaves & Shirley, 2009a, Lortie, 2005) as well as conservatism (Day & Smethem, 2009; Johnson, 2003) as having a significant influence on teacher collaboration. I used this theoretical framework to limit my research to the sociocultural domain that deals with personal and interpersonal capacity. I excluded the organizational domain in order to avoid having organizational factors cloud the impact of sociocultural factors. Due to the questions addressed in this research, data analysis was limited to descriptive and inferential statistics. With descriptive statistics, the characteristics and composition of the participants as well as the participants' level of conservatism, innovation, individualism, interdependence, competition, and cooperation and the level of teacher collaboration within their practice were determined. Using inferential analyses, the degree and direction of relationships among the variables and

relationships between the teacher identity norms and teacher collaboration were examined.

Using statistical analysis limits the assumptions that can be made regarding the results. For example, if a research study showed a statistically significant positive correlation between the teacher identity norm of interdependence and collaboration, this would mean that there was only a statistical correlation in the study; the researcher could not state that more teacher interdependence caused more collaboration or that more collaboration caused more teacher interdependence. As George and Mallery (2011) explain, "correlation does not necessarily indicate causation" (p. 126). In other words, researchers cannot use a correlation result to identify the causes of various results.

The electronic nature of this survey also posed limitations on the study. Although electronic data collection provides an easy way to collect data, it may present other challenges. As Creswell (2008) explains,

> the use of the Internet may be limited because of (a) limitations involving the use of listservs and obtaining of email addresses, (b) limitations of the technology itself, (c) lack of a population list, and (d) the questionable representativeness of the sample. Not all participants have access to computers or are comfortable using computers. (p. 166)

In this study, boards of education would not provide a list of teacher email addresses. Because board-initiated emails were used to invite teachers to participate in the study, I had no access or control as to which teachers were contacted. I also had no knowledge as to how accessible computers and technology were to potential participants. As the school boards used broadcast messages to inform teachers of this study, it is possible that this

broadcast information was only visible to teachers for a short period of time. Moreover, the online survey message could have ended up being hidden below many other messages. In other words, interested teachers would have to scroll down the list of messages to find the posting for this research. Thus, all potential participants may not have been made aware of this online survey due to the electronic nature of the online research format. This could have resulted in fewer teachers being given the opportunity to participate.

The timing of the research also presented limitations. In the school year of 2012/2013, the Elementary Teacher Federation of Ontario (ETFO) was in contract negotiations with the government of Ontario and suggested that teachers "pause" on participating in extracurricular activities in their schools. That is, it was suggested to teachers that they stop being involved in activities that did not fall into the category of teaching and any school involvement beyond the school day. Two school boards cited this reason for not wanting to be involved in this research. In their own words, one school board informed me:

> While the board recognizes the importance of this type of study, we still feel the impact of last year's "pausing" of our ETFO [Elementary Teachers Federation of Ontario] members. We are rebuilding trust with our teachers. Asking them to do this survey might be perceived as evaluative this year. (an Ontario district school board, November 15th, 2013)

Due to the political atmosphere impacting teachers' frame of mind, teachers might have been less willing to participate in any activities even once the "pause" ended in the school

year of 2012/2013. It is possible that this political atmosphere impacted the ability to collect data during the study's time period.

Sample size also presented as a limitation to the main study, as the sample was smaller than anticipated. "The required sample size depends principally on two things: (1) the heterogeneity or variability of the population in question, and the (2) degree of accuracy required in conclusions" (Gray & Guppy, 2003, p. 163). If the population is homogeneous, then a smaller sample is required. "With a more heterogeneous population a larger sample is required to achieve a similar level of confidence" (Gray & Guppy, 2003, p. 162). A population of permanent contract elementary teachers is a relatively homogenous population as they have similar roles in their work.

For degree of accuracy, researchers can use a confidence level and confidence interval to determine the degree of accuracy in results. For example, with a sample size of 175 participants from an estimated population of 11,975 teachers, with a 95% confidence level, there is a confidence interval of 8%. This means that any results are within "±8 %"of the statistical result "95%" of the time (Gray & Guppy, 2003, p. 164). For example, if 88% of participants indicated they agreed they liked to take risks in their teaching practice, this means that a researcher can say with 95% confidence that the true percentage of the population indicating the answer is between 79% and 97%.

Reliability and Validity

In this study, strategies were used to generate greater validity and reliability beyond the exploratory factor analysis. Gray and Guppy (2003) state that reliability and validity can be increased with strategies such as using multiple indicators and measures for concepts. In other words, in this instrument several statements measured each teacher

identity norm in teaching practices. According to Gray and Guppy, this is done by tapping complexity, random error reduction, and precision. Tapping complexity allows the "assessment of a full range of a concept" (Gray & Guppy, 2003, p. 73) by using many indicators to capture the aspect of the concept. Using "multiple indicators means that the random errors that are part of any single measure have a better chance of being cancelled out by random errors in other indicators" (Gray & Guppy, 2003, p. 73). Multiple indicators allow researchers to make more precise distinctions between variables because more information is available for each variable.

Missing data could also impact reliability and validity when participants purposely or inadvertently miss a question in a multiscale measurement. Participants were given the opportunity to pass on responding to a statement by indicating *no answer* in the selection of responses. In small samples of data, responses are increasingly important as an omission could impact the validity and reliability of the sample (Gray & Guppy, 2003). However, as George and Mallery (2011) point out, "Although replacing *many* missing values by these techniques can sometimes bias the results, a small number of replacements has little influence on the outcome of your analysis " (p. 48). As missing data consisted of only 1.5% of the overall data, it is unlikely that this impacted the reliability and validity of the study.

Research Ethics Considerations

This study was conducted according to the ethical requirements of the Research Ethics Review Board at Brock University. There were two applications to the Research Ethics Review Board, one for the pilot study and one for the main study. Clearance was

granted by the Board for the pilot study in May 2013 (File #12-248) and for the main study in October 2013 (File #13-051).

The methodology was structured to ensure teacher confidentiality and to protect the integrity of the data collected. No personal identification information was collected in this study in order to ensure respondent confidentiality. Data were held in a locked cabinet and all electronic files were password protected. After the publication of this research, the data will be destroyed. The participants should not have experienced any discomfort by responding to the attitudinal statements in the instrument. If they did, they had the option of choosing the *no answer* selection from the choices. There was no cost to the participants, and the online instrument took 5 minutes to complete. The results of this study will be provided to the boards of education that sponsored this research.

For the online study, consent was indicated when participants read the Information Consent Form in the participation section of the survey and proceeded with the questionnaire by clicking on "I consent to my participation in this research." If participants did not wish to consent to participate, they were instructed to leave the website. Participants were able to leave the website at any time during the completion of the survey until they submitted their data.

The participants were able to contact the researcher or the researcher's advisor with any questions or requests for information based on the information listed on the Information Consent Form and the Letter of Invitation. The participants were able to contact the researchers at any time before, during, and after they participated in this study. Participants were able to withdraw from the study at any time, without penalty or reason, up to the time the survey was completed and the data were submitted online.

Since participants' data were not linked in any way to participants' identities, participants were not able to withdraw from the study once their survey data had been submitted because the researcher had no way of identifying an individual participant's data.

Anonymity was maintained as data were not linked to the participants' identities. Since the online link required no participant identification (i.e., no email address, IP address, or URL link), no personal identifiers were collected in the study. Participants' data were stored using computer generated numbers according to the order they submitted the survey data online rather than to any personal identifiers. All data were housed in password protected files or in a locked filing cabinet.

Chapter Summary

The study used a quantitative online, researcher-designed instrument to collect data from participating elementary teachers in seven Ontario school boards. The participants responded to statements that measured teacher identity norms and collaboration in their teaching practices. Descriptive and inferential statistics were used to investigate the relationships between and among the variables of statements measuring the teacher identity norms of conservatism, innovation, individualism, interdependence, competition, and cooperation and statements measuring the variable of teacher collaboration.

CHAPTER FOUR: FINDINGS

In this research study, I investigated the relationships between teacher identity norms and collaboration in teachers' practices in public elementary schools in Ontario. In this chapter, the findings will be presented. The chapter begins with a presentation of demographic data. Following the description of the participants, results will be presented to demonstrate the teacher identity norms and collaboration for each of the survey statements. Pearson correlation results will show the relationships between teacher identity norms and teacher collaboration and the relationships among the various teacher identity norms. Following this, results of analysis of variance and independent samples t-tests will be presented to demonstrate the impact of demographic variables on the teacher identity norms and collaboration. The chapter ends with a summary of the results.

Demographic Characteristics

A total of 231 participants completed the online survey. Of these participants, data from 52 participants were deleted from the sample as the participants identified themselves as secondary panel teachers or occasional, nonpermanent teachers. In addition, four participants who identified themselves as administrators and not teachers were deleted from the sample. In total, data from 56 participants were excluded from the sample as they were outside the scope of the study.

After these exclusions, the sample size consisted of data from 175 elementary, teachers representing approximately 60,000 permanent contract teachers. Within the sample of teachers, 164 (94.7%) participants were serving on full-time permanent contracts and 11 (6.3%) participants were serving on part-time permanent contracts. A total of 147 (84%) participants identified as female and 28 (16%) identified as male. The

Elementary Teachers Federation of Ontario (ETFO, 2013), which represents permanent contract elementary teachers in Ontario, indicated that statistics consistently show 82% of their membership as female. Thus, with respect to gender, the sample for this study, with 84% female participants, is reasonably representative of the population of elementary teachers in Ontario (refer to Table 1). Further to this, ETFO indicated in their 2013 membership survey that 90% of their membership served in full-time permanent contract positions. Thus, with respect to contract status, the sample of the study, with 94% of participants with full-time permanent contracts, is reasonably representative of the population of elementary teachers in Ontario.

Participants indicated their current teaching assignments to be as follows: 44 (25.1%) participants in primary grades (Junior Kindergarten to grade 3), 33 (18.9%) participants in junior grades (grades 4 to 6), 33 (18.9%) participants in intermediate grades (grades 7 to 10), 21 (12%) participants in special education, 11 (6.3%) participants in English-as-a-Second-Language, and 35 (20%) indicating a variety of other assignments (see Table 1 for further details). These results demonstrate that data were drawn from participants representing a wide variety of teaching positions.

The mean of equivalent years of teaching was 13.5 years with a standard deviation of 8.3 years and a range of 0 years to 38 years taught. ETFO (2013) indicated in their 2013 membership survey that the mean of equivalent years of teaching was 14.0 years with a standard deviation of 10 years and a range of 0.1 to 55 years taught. In the research, one peak occurred at 8 years (i.e., the mode) and had a sample median of 12 years. In their 2013 membership survey, ETFO indicated that the mode occurred at year

Table 1

Demographic Characteristics

Characteristic	n	%
Contract status		
Full-time permanent	164	93.7%
Part-time permanent	11	6.3%
Gender		
Female	147	84.0%
Male	28	16.0%
Teaching Assignment		
Primary (JK to Grades 3)	44	25.1%
Split/mixed Primary/Junior	5	2.9%
Junior (Grades 4 to 6)	33	18.9%
Split/mixed Junior/Intermediate	7	4.0%
Intermediate (Grades 7 to 10)	33	18.9%
High School (Grades 9-10)	2	1.1%
Special Education	21	12.0%
ESL/Special Education	8	4.6%
English-as-a-Second-Language	3	1.7%
Library	5	2.9%
Itinerant/Resource	6	3.4%
Physical Education	2	1.1%
Music	2	1.1%
Art	1	0.6%
Other	3	1.7%
Classification of equivalent years taught		
Early career teachers (0 to 5 years)	25	14.3%
Middle career teachers (6 to 20 years)	116	66.3%
Late career teachers (21+ years)	34	19.4%
Type of school board		
Urban	142	81.1%
Rural	16	9.1%
Both urban & rural	4	2.3%
Northern Ontario	13	7.4%

10 and had a median of 12 years. A total of 119 (68%) participants in this research ranged in equivalent years of teaching from 5.2 years to 21.8 years based on the number of participants that fell within one standard deviation of the mean. For the ETFO membership survey, a total of 20,138 (68%) members ranged in equivalent years of teaching from 4.0 years to 24.0 years based on the number of members that fell within one standard deviation of the mean (ETFO, 2013). Thus, with respect to the years of teaching experience, the sample of the study is reasonably representative of the population of elementary teachers in Ontario.

In the study, there were a total of 25 (14.3%) early career participants based on 0 to 5 equivalent years of teaching experience. A total of 116 (66.3%) middle career participants were based on 6 to 20 equivalent years of teaching experience. A total of 34 (19.4%) late career participants were based on over 21 equivalent years of teaching experience. For the ETFO 2013 membership survey, there were a total of 6,066 (20.5%) early career members based on 0 to 5 equivalent years of teaching experience. A total of 16,003 (54%) middle career members were based on 6 to 20 equivalent years of teaching experience. A total of 7,546 (25.5%) late career members were based on over 21 equivalent years of teaching experience (ETFO, 2013). Thus, with respect to the sample's breakdown of early, middle, and late career teachers, the sample of the study is reasonably representative of the population of elementary teachers in Ontario.

Data were drawn from seven boards of education across Ontario: two urban boards, two rural boards, and three northern boards (see Table 1). These boards represented an estimated population of 11,972 permanent, elementary teachers in Ontario. A total of 142 (81.1%) participants indicated they taught in boards classified as urban. A

total of 16 (9.1%) participants indicated they taught in boards classified as rural. A total of 13 (7.4%) participants indicated they taught in boards from Northern Ontario. In addition, four (2.3%) participants indicated they taught in boards classified as both urban and rural. The sample of 175 participants represented approximately 1.5% of the population of permanent, elementary teachers in the participating boards, which correspond to approximately 1.6% of the population from urban boards, 0.8% from rural boards, and 1.5% from Northern Ontario boards.

For the ETFO (2013) survey, their sample size of 29,615 members represented approximately 60,000 elementary teachers in Ontario with approximately 50% of the population of ETFO members participating in their survey. Data for the breakdown of the type of school board where the population of elementary teachers worked in Ontario were not available but it was indicated that the majority of teachers worked in urban school boards (ETFO, 2013).

Collaboration and Teacher Identity Norms

Two statements in the survey measured actual and desired collaboration and the remaining 20 statements measured the teacher identity norms of innovation, conservatism, interdependence, individualism, cooperation and competition. Data were collected using a 5-point Likert scale of strongly agree (1), agree (2), neither agree nor disagree (3), disagree (4), and strongly disagree (5). Frequency counts were conducted to determine the actual and desired collaboration and the teacher identity norms.

Teacher Collaboration

Of the two statements measuring collaboration, the first statement, "Our schools' level of teacher collaboration is high," measured the actual collaboration experienced by

participants. For this statement, the frequency count showed two data peaks, with 49% of participants (*n*=86) either agreeing or strongly agreeing and 32% of participants (*n*=56) either disagreeing or strongly disagreeing. This represents a bimodal distribution with just under half of the participants experiencing a high presence of collaboration in their schools and just under a third of the participants not experiencing a high presence of collaboration (refer to Table 2).

The second statement, "Teacher collaboration is a critical component to my teacher practice," measured the desired collaboration for participants. Data for this statement showed high levels of agreement with 81% of participants (*n*=142) agreeing or strongly agreeing. When considering the data from the first statement, which showed a bimodal distribution in actual collaboration, the results indicate that not all participants' desire for collaboration was being met.

Teacher Cooperation

Three statements measured cooperation in the questionnaire. The first statement, "I experience cooperation among my colleagues," showed 79% o participants (*n*=138) agreeing or strongly agreeing. The second statement, "I do not mind if other teachers are in my classroom watching me teach," indicated 76% of participants (*n*=132) agreed or strongly agreed. The third statement, "In order to improve my practice, I encourage input from my colleagues regarding teaching practices," had 68% of participants (*n*=118) agreeing or strongly agreeing. In considering the data from these three statements, the results showed high levels of cooperation among participants.

Table 2

Statement data by Likert scale response measuring the teacher identity norms of collaboration, cooperation, and competition

Statements	Teacher identity norm	n = Strongly agree	% Strongly agree	n = Agree	% Agree	n = Neither agree or disagree	% Neither agree or	n = Disagree	% Disagree	n = Strongly disagree	% Strongly disagree
Our schools' level of teacher collaboration is high.	Coll.	12	7%	74	42%	32	18%	43	25%	13	7%
Teacher collaboration is a critical component to my teaching practice.	Coll.	60	34%	82	47%	19	11%	9	6%	4	2%
Total	Coll.	36	21%	78	45%	26	15%	26	14%	9	5%
I do not mind if other teachers are in my classroom watching me teach.	Coop.	59	34%	73	42%	32	18%	6	3%	2	1%
I experience cooperation among my colleagues.	Coop.	32	18%	106	61%	23	13%	12	7%	2	1%
In order to improve my practice, I encourage input from my colleagues regarding teaching practices.	Coop.	31	18%	87	50%	32	18%	18	10%	6	3%
Total	Coop.	41	23%	89	51%	29	17%	13	7%	3	2%
I am uncomfortable with other teachers watching me teach in my classroom.	Comp.	9	5%	12	7%	30	17%	58	33%	58	33%
I feel my colleagues compete with each other for recognition in our school.	Comp.	28	16%	44	25%	26	15%	61	35%	15	9%
If I have a challenge with my teaching practice, I cannot ask my colleagues for help.	Comp.	2	1%	10	6%	25	14%	75	43%	63	36%
Total	Comp.	13	7%	22	13%	27	15%	65	37%	45	26%

Note. Coll. = Collaboration, Coop. = Cooperation, Comp. = Competition

Teacher Competition

Three statements measured competition among participants. The first statement, "I feel my colleagues compete with each other for recognition in our school," showed a bimodal distribution where 41% of participants (*n*=72) either agreed or strongly agreed and 44% of participants (*n*=76) either disagreed or strongly disagreed. The second statement, "If I have a challenge with my teaching practice, I cannot ask my colleagues for help," showed 79% of participants (*n*=138) disagreeing. The third statement, "I am uncomfortable with other teachers watching me teach in my classroom," had 66% of participants (*n*=138) disagreeing or strongly disagreeing. For this particular statement, eight (4.6%) participants did not respond.

For the statements measuring competition, data showed bimodal distribution in responding to competing for recognition. These results showed there were two groups of participants, those participants (41%) who agreed with the existence of levels of competition for recognition and those participants (44%) who did not agree. With the two remaining statements, the results were more aligned where participants had similarly high levels of disagreement with the statements. In other words, participants agreed they could get support from their colleagues, which showed low levels of competition.

Teacher Interdependence

Four statements measured interdependence on the basis of how often (daily or weekly) participants interacted with their colleagues and how often their colleagues interacted with them. Regardless of the direction of interaction (participants interacting with colleagues or colleagues interacting with participants), the results were similar between the frequency of daily and weekly interactions (see Table 3). Two peaks occurred

Table 3

Statement data by Likert scale response measuring the teacher identity norms of interdependence and individualism

Statements	Teacher identity norm	n = Strongly agree	% Strongly agree	n = Agree	% Agree	n = Neither agree or disagree	% Neither agree or disagree	n = Disagree	% Disagree	n = Strongly disagree	% Strongly disagree
I interact with my colleagues regarding my teaching practice on a daily basis.	Inter.	15	9%	63	36%	32	18%	56	32%	7	4%
My colleagues interact with me regarding their teaching practices on a daily basis.	Inter.	20	11%	57	33%	20	11%	62	35%	13	7%
I interact with my colleagues regarding my teaching practice on a weekly basis.	Inter.	25	14%	94	54%	24	14%	25	14%	4	2%
My colleagues interact with me regarding their teaching practices on a weekly basis.	Inter.	36	21%	77	44%	24	14%	24	14%	12	7%
Total	Inter.	24	14%	73	42%	25	14%	42	24%	9	5%
I feel professionally isolated from my colleagues.	Indiv.	6	3%	32	18%	32	18%	52	30%	50	29%
I prefer to rely on myself and not to rely on my colleagues as part of my teaching practice.	Indiv.	6	3%	39	22%	36	21%	59	34%	32	18%
I prefer to work alone in my teaching practice instead of working with other teachers.	Indiv.	3	2%	18	10%	24	14%	73	42%	56	32%
My colleagues have little or no impact on my teaching practice.	Indiv.	1	1%	16	9%	38	22%	72	41%	47	27%
Total	Indiv.	4	2%	26	15%	33	19%	64	37%	46	26%

Note. Inter. = Interdependence, Indiv. = Individualism

between agreeing and disagreeing in the frequency of daily interactions. For the statement, "I interact with my colleagues regarding my teaching practice on a daily basis," 45% of participants (*n*=78) agreed or strongly agreed while 36% of participants (*n*=63) disagreed or strongly disagreed. Similarly, for the statement, "My colleagues interact with me regarding their teaching practice on a daily basis," 44% of participants (*n*=77) agreed or strongly agreed while 42% of participants (*n*=75) disagreed or strongly disagreed. Although the data showed that more participants were interacting with their colleagues than not interacting on a daily basis, the results presented a bimodal distribution, with similar frequency counts of interacting and not interacting on the daily time frame with colleagues.

For data dealing with weekly interactions, the results were skewed to the left. For example, for the statement "I interact with my colleagues regarding my teaching practice on a weekly basis," 68% of participants (*n*=119) agreed or strongly agreed. For the statement, "My colleagues interact with me regarding their teaching practice on a weekly basis," 65% of participants (*n*=113) agreed or strongly agreed that their colleagues interacted with them on a weekly basis.

Overall, the data showed that on a weekly basis, participants were interacting with their colleagues more frequently than not interacting, and were interacting on a weekly basis more frequently than on a daily basis.

Teacher Individualism

Four statements measured individualism in participants. The first statement, "I feel professionally isolated from my colleagues," showed that 59% of participants (*n*=112) disagreed or strongly disagreed. The second statement, "I prefer to rely on myself and not to rely on my colleagues as part of my teaching practice," showed that 52% of participants

(*n*=91) disagreed or strongly disagreed. The third statement, "I prefer to work alone in my teaching practice instead of working with other teachers," showed that 74% of teacher participants (*n*=129) disagreed or strongly disagreed. The fourth statement, "My colleagues have little or no impact on my teaching practice," had 68% of participants (*n*=119) disagreeing or strongly disagreeing. These results indicate that levels of individualism among participants tended to be low.

Teacher Innovation

Four statements measured innovation in participants. The first statement, "I adapt my lessons and assessments to meet the needs of my students in my teaching practice," showed 98% of participants (n=170) agreeing or strongly agreeing. The second statement, "I like to take risks in my teaching practice," showed 87% of participants (n=152) agreeing or strongly agreeing. The third statement, "I like to try new things in my teaching practice," showed that 96% of participants (n=167) agreed or strongly agreed. The final statement, "My teaching practices are always changing," showed that 87% of participants (*n*=151) agreed or strongly agreed. Overall, the data indicated high levels of innovation in teaching practices (refer to Table 4).

Teacher Conservatism

Two statements indicated conservatism in participants' teaching practices. The first statement, "I prefer not to take risks in my teaching practices," showed that 89% of participants (*n*=154) disagreed or strongly disagreed. The second statement, "I prefer to stick to the teaching practices that I know work rather than try new things in my teaching practice," showed 83% of participants (*n*=145) disagreeing or strongly disagreeing.

Table 4

Statement data by Likert scale response measuring the teacher identity norms of innovation and conservatism

Statements	Teacher identity norm	n = Strongly agree	% Strongly agree	n = Agree	% Agree	n = Neither agree or disagree	% Neither agree or disagree	n = Disagree	% Disagree	n = Strongly disagree	% Strongly disagree
I adapt my lessons and assessments to meet the needs of my students in my teaching practice.	Innov.	106	61%	64	37%	4	2%	1	1%	0	0%
I like to take risks in my teaching practice.	Innov.	57	33%	95	54%	18	10%	2	1%	1	1%
I like to try new things in my teaching practice.	Innov.	80	46%	87	50%	6	3%	1	1%	0	0%
My teaching practices are always changing.	Innov.	73	42%	78	45%	21	12%	3	2%	0	0%
Total	Innov.	79	45%	81	46%	12	7%	2	1%	0	0%
I prefer not to take risks in my teaching practices.	Cons.	3	2%	3	2%	11	6%	80	46%	76	43%
I prefer to stick to the teaching practices that I know work rather than try new things in my teaching practice.	Cons.	1	1%	10	6%	19	11%	99	57%	46	26%
Total	Cons.	2	1%	7	4%	15	9%	90	51%	61	35%

Note. Innov. = Innovation, Cons. = Conservatism

The frequency counts from these two statements indicate low levels of conservatism in participants' teaching practices.

Relationships Between and Among Teacher Identity Norms and Teacher Collaboration

To test the relationships between identity norms and collaboration, the first and second hypotheses were stated as follows: (a) "teacher identity norms will correlate with teacher collaboration" and (b) "teacher identity norms will correlate with each other." Pearson Correlations were performed to test each hypothesis. The analysis used the overall mean levels of statements measuring the identity norms. By calculating the mean levels of each identity norms, multiple indicators were used to cancel out the chance of random errors from single measures of the identity norms and, in turn, allowed for more precise distinctions between variables (Gray & Guppy, 2003).

Relationships Between Collaboration and Teacher Identity Norms

In order to test the hypothesis, "teacher identity norms will correlate with teacher collaboration," a Pearson Correlation was performed with the statements measuring actual and desired collaboration and the norms of interest. In order to compare these norms to levels of actual and desired collaboration, the statements measuring conservatism, individualism, interdependence, competition, and cooperation (refer to Table 5) were combined into one score as a norm mean for each norm of interest. The mean scores for the norms were grouped together for reporting purposes based on the direction of their correlations with actual and desired collaboration.

No statistically significant correlation (r= -.035, p>.05) occurred between the statement measuring actual collaboration and the mean of innovation. A statistically

Table 5

Correlations of Statements Measuring Collaboration and Teacher Identity Norms

		1	2	3	4	5	6	7	8
1. Actual Collaboration	Pearson Correlation	_							
	Sig. (2-tailed)	_							
2. Desired Collaboration	Pearson Correlation	.153*	_						
	Sig. (2-tailed)	.043	_						
3. Conservatism	Pearson Correlation	.006	-.317**	_					
	Sig. (2-tailed)	.948	.000	_					
4. Innovation	Pearson Correlation	-.035	.281**	-.650**	_				
	Sig. (2-tailed)	.699	.002	.000	_				
5. Individualism	Pearson Correlation	-.297**	-.574**	.381**	-.244**	_			
	Sig. (2-tailed)	.001	.000	.000	.007	_			
6. Interdependence	Pearson Correlation	.485**	.379**	-.300**	.334**	-.560**	_		
	Sig. (2-tailed)	.000	.000	.001	.000	.000	_		
7. Competition	Pearson Correlation	-.222*	-.276**	.168	-.192*	.483**	-.338**	_	
	Sig. (2-tailed)	.015	.002	.070	.038	.000	.000	_	
8. Cooperation	Pearson Correlation	.344**	.347**	-.181*	.186*	-.425**	.478**	-.530**	_
	Sig. (2-tailed)	.000	.000	.048	.043	.000	.000	.000	_

Note. *. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

significant positive correlation (r= .281, p < .01) existed between the statement measuring desired collaboration and the mean of innovation. A statistically significant positive correlation (r= .485, p < .01) occurred between the statement measuring actual teacher collaboration and the mean of interdependence. A statistically significant (r= .379, p < .01) positive correlation existed between the statement measuring desired collaboration and the mean of interdependence. A statistically significant positive correlation (r= .344, p < .01) occurred between the statement measuring actual collaboration and the mean of cooperation. A statistically significant positive correlation (r= .347, p < .01) existed between the statement measuring desired collaboration and the mean of cooperation. There was a positive correlation between actual and desired correlation of (r= .153, p < .05).

No statistically significant correlation (r= .006, p > .05) was found between the statement measuring actual collaboration and the mean of conservatism. A statistically significant negative correlation (r= -.317, p < .01) existed between the statement measuring desired collaboration and the mean level of conservatism. A statistically significant negative correlation (r= -.297, p < .01) occurred between the level of actual collaboration and the mean of individualism. A statistically significant negative correlation (r= -.574, p < .01) existed between desired collaboration and the mean of individualism. A statistically significant negative correlation (r= -.222, p < .05) occurred between the level of actual collaboration and the mean of competition. A statistically significant negative correlation (r= -.276, p < .01) existed between desired collaboration and the mean of competition.

To summarize, the analysis yielded two correlational clusters of teacher identity norms, with one cluster correlating positively and the other cluster correlating negatively

with collaboration. Specifically, interdependence and cooperation positively correlated with actual and desired collaboration, and innovation positively correlated with desired collaboration but not actual collaboration. By contrast, individualism and competition negatively correlated with actual and desired correlation, and conservatism negatively correlated with desired collaboration but not actual collaboration. The hypothesis that interdependence, cooperation, individualism, and competition will correlate with actual and desired collaboration was supported. The hypothesis that innovation and conservatism will correlate with teacher collaboration was supported for desired collaboration but not supported for actual collaboration.

Relationships Among Teacher Identity Norms

In order to test the study's second hypothesis, "teacher identity norms will correlate with each other," Pearson Correlations were performed between the mean of the statements measuring innovation, interdependence, cooperation, conservatism, individualism, and competition (refer to Table 5).The norms were grouped for reporting purposes based on the direction of their correlations with each other.

The norms of innovation, interdependence, and cooperation showed positive correlations with each other. A statistically significant positive correlation existed between innovation and interdependence (r= .334, p < .01), between innovation and cooperation (r= .186, p < .05), and between interdependence and cooperation (r= .478, p < .01). The norms of conservatism, individualism, and competition showed significant positive correlations with each other. A statistically significant positive correlation existed between conservatism and individualism (r= .381, p < .01) and between individualism and competition (r= .483, p < .01). There was a weak positive correlation between

conservatism and competition (r= .168, p > .05), although it was not statistically significant.

The norms of innovation, interdependence, and cooperation showed significant negative correlations with conservatism, individualism, and competition. A statistically significant negative correlation existed between innovation and individualism (r= -.244, p < .01), between innovation and competition (r= -.192, p < .05), and between innovation and conservatism (r= -.650, p < .01). A statistically significant negative correlation existed between interdependence and conservatism (r= -.300, p < .01), between interdependence and individualism (r= -.560, p < .01), and between interdependence and competition (r= -.338, p < .01). There was a statistically significant negative correlation between cooperation and conservatism (r= -.181, p < .05), between cooperation and individualism (r= -.425, p < .01), and between cooperation and competition (r= -.530, p < .01).

To summarize, the analysis supported the hypothesis “teacher identity norms will correlate with each other” by showing two clusters of correlations of teacher identity norms. The cluster of innovation, interdependence, and cooperation, positively correlated with each other and negatively correlated with the norms of conservatism, individualism, and competition. The second cluster of conservatism, individualism, and competition, positively correlated with each other and negatively correlated with the norms of innovation, interdependence, and cooperation. The results showed that within participants' practices, as conservatism, individualism, and/or competition increased, innovation, interdependence, and/or cooperation decreased.

Impact of Demographic Variables on Teacher Identity Norms and Collaboration

The impact of demographic variables on teacher identity norms and teacher collaboration were investigated. The hypothesis, "Teachers' stage of career and gender will affect collaboration and teacher identity norms," was used to test the impact of demographic data on the teacher identity norms and teacher collaboration.

Impact of Career Stage

In order to examine the first premise that teacher experience impacts teacher identity norms and collaboration, inferential statistical tests were performed. Considering various definitions in the research literature, the analysis was based on defining early career teachers as having 0 to 5 years of equivalent teaching experience, middle career teachers as having 6 to 20 years of equivalent teaching experience, and late career teachers as having over 21 years equivalent teaching experience.

To test the impact of career stage on teacher identity norms and collaboration, participants were grouped into three categories: early career teachers (n=25), middle career teachers (n=116), and late career teachers (n=34; refer to Table 1). In order to test the impact of years of teaching on teacher identity norms and collaboration, an Analysis of Variance (ANOVA) was conducted to determine if there was a statistically significant difference between the mean levels of competition, cooperation, individualism, interdependence, conservatism, and innovation and collaboration across the three categories of teaching experience.

For actual and desired collaboration, the results showed no statistically significant difference between early career teachers, middle career teachers, and late career teachers. Further, the results showed no statistically significant difference between early career

teachers, middle career teachers, and late career teachers for any of the teacher identity norms (refer to Tables 6 and 7).

In summary, no statistically significant differences existed across the stages of early, middle, and late career teaching experience for collaboration and the mean levels of competition, cooperation, individualism, interdependence, conservatism, and innovation. Therefore, the hypothesis that career stage impacts collaboration and teacher identity norms was not supported.

Impact of Gender

In order to examine the second hypothesis that gender impacts teacher identity norms and collaboration, an independent samples t-test was used to compare the mean of teacher identity norms and collaboration among female and male participants. The independent samples t-test consists of two tests: Levels of significance for Levene's Test for Equality of Variance and for t-test for Equity of the Means. Both tests showed no levels of significance below 0.01 (refer to Tables 8 and 9).

This analysis determined that no statistically significant differences existed between the participants' genders for the mean levels of competition, cooperation, individualism, interdependence, conservatism, and innovation and collaboration. Therefore, the hypothesis that the gender of teachers impacts the collaboration and teacher identity norms was not supported.

Summary of Results

A total of 175 permanent contract teachers from seven school boards across Ontario participated in this research. Descriptive statistics included frequencies of demographic characteristics and the frequency of responses to the statements in the instrument.

Table 6

Mean Levels of Teacher Identity Norms and Collaboration for Early, Middle, and Late Careers Teachers

		n	M	SD	SE
Actual level of teacher collaboration	early career	25	2.71	0.98	0.20
	mid career	116	2.91	1.12	0.10
	late career	34	2.68	1.15	0.20
	Total	175	2.83	1.10	0.08
Desired level of teacher collaboration	early career	25	1.84	0.94	0.19
	mid career	116	1.98	0.93	0.09
	late career	34	1.91	1.00	0.17
	Total	175	1.95	0.94	0.07
Mean of level of competition	early career	17	3.75	0.71	0.17
	mid career	76	3.64	0.85	0.10
	late career	27	3.72	0.65	0.12
	Total	120	3.68	0.78	0.07
Mean of level of cooperation	early career	17	1.94	0.50	0.12
	mid career	79	2.11	0.65	0.07
	late career	26	2.01	0.44	0.09
	Total	122	2.07	0.59	0.05
Mean of level of individualism	early career	18	3.93	0.71	0.17
	mid career	79	3.78	0.74	0.08
	late career	26	3.56	0.68	0.13
	Total	123	3.76	0.73	0.07
Mean of level of interdependence	early career	15	2.70	1.03	0.27
	mid career	79	2.53	0.95	0.11
	late career	26	2.82	0.97	0.19
	Total	120	2.61	0.96	0.09
Mean of level of conservatism	early career	17	4.32	0.61	0.15
	mid career	80	4.26	0.66	0.07
	late career	26	4.00	0.58	0.11
	Total	123	4.22	0.64	0.06
Mean of level of innovation	early career	18	1.63	0.46	0.11
	mid career	80	1.59	0.47	0.05
	late career	25	1.76	0.52	0.10
	Total	123	1.63	0.48	0.04

Table 7

ANOVA of Levels of Teacher Identity Norms for Early, Middle, & Late Careers Teachers

		SS	df	F	Sig.
Actual level of Teacher collaboration	Between (Combined) Groups	1.80	2	0.74	0.48
	Within Groups	210.36	172		
	Total	212.17	174		
Desired level of teacher collaboration	Between (Combined) Groups	0.48	2	0.27	0.77
	Within Groups	154.06	172		
	Total	154.54	174		
Mean of level of competition	Between (Combined) Groups	0.20	2	0.16	0.85
	Within Groups	72.79	117		
	Total	72.99	119		
Mean of level of cooperation	Between (Combined) Groups	0.49	2	0.69	0.50
	Within Groups	42.10	119		
	Total	42.59	121		
Mean of level of individualism	Between (Combined) Groups	1.64	2	1.56	0.21
	Within Groups	62.98	120		
	Total	64.62	122		
Mean of level of interdependence	Between (Combined) Groups	1.76	2	0.95	0.39
	Within Groups	108.34	117		
	Total	110.11	119		
Mean of level of conservatism	Between (Combined) Groups	1.58	2	1.96	0.15
	Within Groups	48.46	120		
	Total	50.04	122		
Mean of level of innovation	Between (Combined) Groups	0.55	2	1.19	0.31
	Within Groups	27.50	120		
	Total	28.04	122		

Note. UW = Unweighted, W = Weighted, D = Deviation, Sig. = level of significance

Table 8

Mean Levels of Teacher Identity Norms and Collaboration for Teachers' Gender

Statements	Female Mean	Female SD	Male Mean	Male SD
Actual Collaboration	2.8	1.1	3.1	1.1
Desired Collaboration	1.9	1.0	2.0	0.8
Interdependence*	2.6	1.1	2.7	1.2
Individualism*	3.7	1.1	3.5	1.0
Innovation*	2.6	1.1	2.7	1.2
Conservatism*	4.1	0.8	4.0	1.0
Cooperation*	2.1	0.9	2.2	0.9
Competition*	3.6	1.2	3.6	1.2

Note. 1 = strongly agree, 2 = agree, 3 = neither agree or disagree, 4 = disagree, 5 = strongly disagree
* Mean of level of teacher identity norm

Table 9

Independent Samples T-Test for Teachers' Gender

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig.
Actual levels of teacher	EVA	.031	.861	-1.248	173	.214
	EVNA			-1.296	39.387	.202
Desired levels of teacher collaboration	EVA	.706	.402	-.096	173	.924
	EVNA			-.106	41.819	.916
Mean of level of competition	EVA	.553	.459	-1.128	118	.262
	EVNA			-1.247	14.327	.233
Mean of level of cooperation	EVA	1.789	.184	1.755	120	.082
	EVNA			2.083	16.765	.053
Mean of level of individualism	EVA	.193	.661	.561	121	.576
	EVNA			.642	14.538	.531
Mean of level of interdependence	EVA	.312	.578	.445	118	.657
	EVNA			.401	14.329	.694
Mean of level of conservatism	EVA	.635	.427	-.670	121	.504
	EVNA			-.783	14.749	.446
Mean of level of innovation	EVA	.015	.902	.269	121	.789
	EVNA			.248	14.424	.807

Note. EVA = Equal variances assumed, EVNA = Equal variances not assumed, Sig. = Significance level of data (2-tailed)

Pearson correlations were run to test two hypotheses: (a) teacher identity norms will correlate with teacher collaboration and (b) teacher identity norms will correlate with each other. The first hypothesis was supported. The data showed two correlational clusters of teacher identity norms in which positive and negative correlations were found. The data showed that interdependence and cooperation positively correlated with actual and desired collaboration. The data showed that innovation positively correlated with desired collaboration but did not correlate with actual collaboration. The data showed that individualism and competition negatively correlated with actual and desired collaboration. The data showed that conservatism negatively correlated with desired collaboration but did not correlate with actual collaboration.

The second hypothesis was fully supported by data showing two clusters of correlations of teacher identity norms. One cluster of norms, innovation, interdependence, and cooperation, positively correlated with each other and negatively correlated with the norms of conservatism, individualism, and competition. The second cluster of norms, conservatism, individualism, and competition, positively correlated with each other and negatively correlated with the norms of innovation, interdependence, and cooperation. These results showed that within participants' practices, as conservatism, individualism, and competition increased, innovation, interdependence, and cooperation decreased. Further, connecting this analysis with the findings from the first hypothesis, all the norms in the cluster that correlated positively with collaboration showed a negative correlation with all the norms in the cluster that correlated negatively with collaboration.

The third hypothesis, “teachers’ stage of career and gender will affect collaboration and teacher identity norms” was examined. Inferential statistics using ANOVA determined

there was no statistically significant difference between the early, middle, and late career teachers and teacher identity norms and collaboration. Further, independent samples t-tests determined that there was no statistically significant difference between participants' genders and teacher identity norms and collaboration. The hypothesis was, therefore, not supported.

CHAPTER FIVE: DISCUSSION, IMPLICATIONS, AND CONTRIBUTIONS

The purpose of this research was to investigate how teacher identity norms relate to teacher collaboration and to each other within schools in Ontario. The literature highlights clusters of teacher norms in three areas that may impact collaboration: conservatism and innovation, individualism and interdependence, and competition and cooperation. Using quantitative methods, the relationships between and among these norms and their relationships with teacher collaboration were investigated.

Relationships Between Collaboration and Teacher Identity Norms

The results from this study showed high levels of desired collaboration, thus confirming that collaboration was an important part of teachers' practices. However, the results showed a gap between desired and actual collaboration, wherein teachers agreed that collaboration was important and they were willing to participate in collaborative practices, but high levels of actual collaboration were not found in all schools. This gap suggests that the benefits of collegiality might not live up to expectations because of tensions between the reality and ideology of collaboration. The literature shows that an essential element of collaboration is teachers' commitment and capacity to work with one another (Achinstein, 2002). Despite this level of commitment, teachers are often ill-prepared for the complexity and conflict they face in collegial interactions (Achinstein, 2002). As this study showed a gap between actual and desired collaboration, the desire to collaborate may not be enough to overcome the realities teachers face in their schools.

The central purpose of this study was to investigate how teacher identity norms relate to teacher collaboration. The relationships evident between collaboration and teacher identity norms were addressed in the first hypothesis, "Teacher identity norms will

correlate with teacher collaboration." The statistical analysis showed support for the hypothesis within two clusters of the teacher identity norms. The analysis showed a statistically significant positive correlation between interdependence and cooperation and both actual and desired collaboration. There was a positive correlation between innovation for desired teacher collaboration, but no statistically significant correlation between innovation and actual teacher collaboration. The analysis showed a statistically significant negative correlation between individualism and competition and both desired and actual collaboration. There was a negative correlation between conservatism and desired collaboration, but no statistically significant correlation between conservatism and actual collaboration.

The literature highlights connections between cooperation, interdependence, and collaboration. For example, Marcus and Le (2013) found cooperation to be higher in collaborative groups and Roseth et al. (2008) found a similar association of interdependence in collaborative groups. This study supports these claims in that a positive relationship was found between actual and desired teacher collaboration and the norms of interdependence and cooperation. This finding suggests that if teachers and administrators increase the interdependence and cooperation in their school cultures, actual and desired collaboration may also increase.

On the other hand, the literature cites examples of competition compromising collegial cooperation (Cutcher, 2009; Palmer, 1998/2007; Tapola, 2011), increasing individualism (Cutcher, 2009; Roseth et al., 2008), and limiting collaborative cultures (Johnson, 2003). This study found that competition had positive relationships with levels of individualism and negative relationships with levels of cooperation, interdependence, and

collaboration. Further, lower levels of competition correlated with higher levels of cooperation, interdependence, and collaboration. Thus, lowering the levels of competition and individualism in schools might also result in increases in cooperation, interdependence, and collaboration.

Hargreaves (2010a) suggests that collaboration increases levels of innovation by reducing conservatism. Further to this, Hargreaves and Fullan (2012) state that in the best learning communities, strong collaboration is connected to innovation and professional growth. In addition, Lieberman (2009) claims that conservatism has a negative effect on both collaboration and innovation, as it limits collegial interactions and, thus, inhibits teachers from learning from colleagues. In this study, the literature was supported for desired levels of collaboration as there was a positive link to innovation and a negative link to conservatism. For actual collaboration, however, results showed that participants' levels of innovation or conservatism were not significantly related to the actual levels of collaboration in their schools. There was an inverse correlation between participants' innovation and conservatism. In their classroom, it is teachers who have control over how innovative or conservative they choose to practice. However, due to the complexity of collaboration and the multifaceted nature of schools, teachers might not have control over the actual levels of collaboration in their schools. Therefore, actual levels of collaboration might have little to do with either innovation or conservatism in practice. Instead, the desire to collaborate is more important as it links to teachers' motivation. That is, the desire to collaborate and the level of innovation within practices are within teachers' control.

The findings of this study suggest that competition impedes collaboration. In this study, over 40% of the participants agreed that they competed for recognition in their

schools. When this result is considered in context with the relatively low levels of actual collaboration, it suggests that teacher recognition is an important variable in school culture. Johnson (2003) notes that when teachers do not receive recognition for their contribution to their school or when recognition is unevenly distributed, this can leave teachers feeling that their work is not appreciated. Moreover, he claims, when teachers compete for recognition in schools, isolated subcultures may develop that serve to limit collegial cooperation and to increase competition among colleagues (Johnson, 2003). Competing for recognition shifts schools' cultures by making colleagues less collaborative. With equitable recognition comes a decrease in isolated subcultures, a sustainability of levels of cooperation, and the support of collaborative cultures. By building equitable space for contributions to the school, this reinforces the symbolic and cultural importance of teachers' work, nurtures growth among staff, and sustains school cultures (Saphier & King, 1985).

The relationships between teacher collaboration and identity norms found in the literature were reinforced by this study. There was a positive relationship between desired collaboration and the cluster of the teacher identity norms of innovation, interdependence, and cooperation. In addition, there was a negative relationship of desired collaboration with the cluster of the teacher identity norms of conservatism, individualism, and competition. There was a less significant connection between actual collaboration and the norms of innovation and conservatism.

Relationships Among Teacher Identity Norms

The results from this study showed there were two clusters of teacher identity norms. The norms of innovation, interdependence, and cooperation positively correlated with desired collaboration and negatively correlated with conservatism, individualism, and

competition. Further, conservatism, individualism, and competition negatively correlated with desired collaboration and negatively correlated with innovation, interdependence, and cooperation. In addition, the norms that correlated positively with collaboration also positively correlated with each other, and the norms that correlated negatively with collaboration also positively correlated with each other. Thus, this analysis showed that the norms coalesced into two clusters, one supporting collaboration and one hindering collaboration, rather than along three clusters of opposing norms, as the literature had suggested.

However, the relationships identified in the literature were not refuted by this study. The literature cites connections between the teacher identity norms of conservatism and individualism (Hargreaves & Shirley, 2009b; Lieberman, 2009; Lortie, 1975/2002). Hargreaves (2010b), for example, identifies a direct link between individualism and conservatism. Conservatism in teaching practices happens when teachers follow the status quo and do not change their practices to meet their students' needs (Hargreaves & Shirley, 2009b). According to Hargreaves and Shirley (2009b), this approach reinforces levels of conservatism and limits innovation in practice. In collaborative practices, by contrast, teachers develop strong interdependent communities of "innovation and growth" (Hargreaves & Fullan, 2012, p. 111). When teachers work together collaboratively, they can develop their repertoire through sharing innovative practices (Hargreaves & Fullan, 2012). Therefore, the literature proposes that innovation has an inverse relationship with conservatism and a direct relationship with interdependence. These relationships were supported in this research.

Within the literature, competition among colleagues is associated with teachers competing for resources (Day & Smethem, 2009) and recognition within the school setting (Johnson, 2003). Under these conditions, teachers are unlikely to cooperate with each other by sharing resources such as teaching materials, lesson plans, or practices with colleagues. Kofman and Senge (1993) contend that competition negates cooperation between colleagues. Lortie (1975/2002) claims that individualism happens when teachers prefer to work in isolation away from other teachers. Sahlberg (2010) notes that competition among teachers increases individualism. As the literature suggests, the research showed a positive correlation between the norms of competition and individualism and a negative correlation between competition and the norms of innovation, interdependence, and cooperation.

Impact of Demographic Factors

The research also explored how the demographic characteristics of career and gender affect teacher collaboration and teacher identity norms. The literature suggests that female teachers may be more collaborative than their male colleagues (Acker, 1995), but this was not supported in the results. However, the sampling in this study might have confounded the result. Although the sample ratio of male to female teachers was representative of the population of elementary teachers in Ontario, the inherent imbalance between the representation of males and females (16% male vs. 84% female) may have been a factor in the failure to find a gender difference. Further, the literature suggests that older teachers tend to be less innovative than their less experienced colleagues (Redman & Snape, 2002), but the analysis showed no statistically significant differences across years of experience in average levels of desired and actual collaboration or in average levels of

teacher identity norms. Therefore, no impact of career stage or gender on collaboration or teacher identity norms was found.

The literature suggests that teachers who are conservative in their practice tend to be resistant to change (Hargreaves & Fullan, 2012; Lortie, 1975/2002). In this study, teachers showed high levels of innovation by indicating that they were constantly changing their practices to meet their students' needs. These results were not impacted by gender or career stage. In other words, even the participants who the literature suggests might be more conservative had positive attitudes towards innovation and made changes in their teaching practices. When developing a reform, therefore, policy authors "need to ask whether the theory and assumptions still appear to hold in the settings" (Greenfield, 1993, p. 4). When policy authors make assumptions about teachers, they may be limiting the success of the implementation of their reform policies. When assumptions are made, policy authors may develop reforms that are meant to overcome these assumptions, thus directing energy to a concern that may not be relevant within school contexts. In other words, policy authors, on the assumption that teachers tend to be conservative in practice, may be directing policy to an area that does not need intervention. By assuming that teachers' conservatism leads to resistance (Lortie, 1975/2002), policy authors may fail to include strategies that accommodate the mediation process required to implement reforms (Ball et al., 2012) in the progressive, changing nature of teachers' classrooms.

Discussion

Teacher collaboration is an important driver of educational change and of school culture. Research shows that when teachers engage in teacher collaboration, there are "improvements in teaching and learning" (Hord & Tobia, 2012, Kindle location 861) and

"gains in student learning" (McLaughlin & Talbert, 2010, p. 36). In addition, teacher collaboration is a key forum for the implementation of government and district initiatives and the changing of classroom practice (Fullan et al., 2006). Therefore, collaboration is the intersection where school culture and the implementation of policy reform meets.

Participants in this study agreed that collaboration was a critical component of their desired teaching practice but faced challenges with the reality of making actual collaboration happen in their schools. Changing the way teachers think about their role in education is difficult, as Fullan (2001) points out: “Educational change depends on what teachers do and think - it’s as simple and as complex as that. It would all be easier if we could legislate changes in thinking” (p. 115). For the participants in this study, a cultural change in teachers' thinking appeared to have taken place as the desire for teacher collaboration was present within their school cultures. The next step in educational change, therefore, is to capitalize on this opportunity of teachers' desire to collaborate by providing structures, such as common planning time (Szczesiul & Huizenga, 2014) and interdependent teaching roles (Louis & Kruse, 1995), that will further develop actual collaboration. In this study, the gap between the wish to collaborate and the reality of collaboration showed that, without organizational support, teachers will be challenged in building actual collaboration among their peers and could remain isolated within their practice.

In order to honour the important place of teacher collaboration in school cultures and in educational change, sustainable structures to support collaboration are essential. Lortie (2005/1975), for example, points out that "time is the most scarce resource in schools. A major challenge of school administrators is to manage the [school's] use of time

wisely to achieve the best possible outcomes" (p. xii). Lortie (1975/2002) states further that students' "time on task" is important to student learning and that teachers should spend their "time on task" expanding their learning about how to meet students' needs. Lortie (1975/2002) believes that "there is no teacher-induced learning whatsoever when time is spent on paperwork and on other tasks not related to teaching" (p. xii). He believes teachers' core tasks should be the production of student and teacher learning. Professional development opportunities can embed the core tasks of working and learning collaboratively in schools. This kind of professional development is built on the "understanding that teachers prefer to learn from peers, particularly when those peers can demonstrate their effectiveness with students" (Lortie, 1975/2002, p. xv). Thus, professional development in schools can support the growth of collaboration that focuses on the learning needs of students in diverse classroom settings.

This study showed a connection between collaboration and school culture, as expressed in teacher identity norms. From this perspective, school cultures impact changes because they affect actual collaboration, and collaboration is used as a policy driver for organizational change. Hence, it is important to acknowledge school culture as a significant component of change in school settings. Since schools are dynamic organizations, they are always undergoing shifts and changes by making technical, political, and cultural adjustments (Tichy, 1980). Tichy posits that changes in one dimension will trigger changes in one or both of the other dimensions. In the case of teacher collaboration, the technical shift of teachers working collaboratively has triggered a desire for collaboration within teachers' professional identities. Asking professionals who are accustomed to working as individuals to work as members of a collaborative group has created cultural and

organizational adjustment challenges in schools.

As part of the technical push towards building collaborative teacher cultures, the importance of teacher leadership should be recognized as an impetus that moves teachers into thinking about collaboration as part of their practice. As teachers become more involved in the organizational capacity of their schools and the improvement of instructional strategies to develop student learning, this change, in turn, advances the idea of the teacher as a school leader (York-Barr & Duke, 2004). Further, this idea of the teacher as a proactive leader, instead of a passive recipient of directions, may have changed the landscape of thought by creating a further change in how teachers work. Although this study did not specifically address teacher leadership, the idea of "expanded teacher leadership roles" and teachers' contributions within school leadership may result "in improving schools" (Smylie & Denny, 1990, p. 237). In addition, "promoting shared decision making" collaboratively as part of teacher leadership and "efforts to formalize and institutionalize these roles" (Smylie & Denny, 1990, p. 237) may have resulted in changes in the vision of teachers' roles in schools.

The amount of collaboration in school cultures can nurture or hinder changes in teaching practices. Hord and Tobia (2012) challenge teachers to reclaim the original intent of collaborative learning communities that focus on collaboration as an opportunity to learn and refine professional practice. Often teachers play a passive role, waiting to be provided with funding and perhaps release time to support initiatives that often are developed outside their school setting (Hargreaves, 2010b). In such circumstances, teachers often wait to be told with whom and how to collaborate on specific school initiatives. Since the majority of participants in this study desired collaboration with their colleagues, this

implies that given the opportunity, they would seek more collaboration to develop their practice. In order to support collaborative practices, teachers need to be more proactive by asking for time within the instructional day that is specifically geared to collaboration for developing, planning, and assessing of curriculum to meet their specific classroom needs. By advocating for more time to work with colleagues, they can take more control over their practices. With this advocacy, teachers may be the change agents that build and sustain the critical teacher collaboration needed to support and build progressive teaching practices.

In initiative-focused education change, administrators may focus on implementing reforms and change objectives and, thus, not realize that it is a cohesive, collaborative culture that promotes and sustains these changes. By promoting teacher norms that reinforce collaborative cultures, such as cooperation, innovation, and interdependence, initiatives have a better chance of being successful over a longer time. In other words, reforms that are flexible enough to adapt to the ever-changing practices of teachers' classrooms have a better chance of being implemented than reforms that are difficult to fit into existing teachers' practices or that do not meet students' needs. In addition, reforms that concentrate on quick-fix objective achievements may show results in the short-term but may be discarded and/or not sustained in the long-term if they hold little meaning in light of the realities of dynamic classrooms and schools. The reforms that make a real difference are those that become embedded within classroom and school practices. As Schleicher (2009) states, it can take as many as 10 to 15 years for new reforms to filter down through the layers of existing practices and previous reforms to become embedded in current teaching practices. Checking off the implementation of initiatives for the short-term means nothing if these initiatives no longer exist a few years into the future. This cycle of

failed "turnstile" reforms (Sennett, 1998, p. 112) can lead to reform fatigue. After experiencing many years of transient teamwork and discarded reforms, teachers may become complacent or disengaged when future reforms are introduced.

For the most part, the relationships suggested in the literature regarding teacher identity norms and collaboration were reproduced in this study. The positive relationships between collaboration and the cluster of identity norms of innovation, interdependence, and cooperation were expected as these norms are purported to be conducive to collaboration. Furthermore, the negative relationships of collaboration with the cluster of identity norms of conservatism, individualism, and competition were also expected as these norms are not deemed to be favourable to collaboration. In addition, the directionality of the relationships between the teacher identity norms was consistent with the literature as innovation and conservatism, interdependence and individualism, and cooperation and competition were expected to be contrary to each other. Also, the collaboration-supportive norms positively related to each other as the collaboration-inhibiting norms also positively related to each other. Therefore, in school cultures anchored in collaboration-supportive norms, such as innovation, interdependence, and cooperation, schools can be expected to have a healthy collaborative culture. Further, in school cultures anchored in norms of conservatism, individualism, and competition, schools can be expected to have challenges in building a collaborative culture. Since much of the research that deals with the norms of interest is qualitative in nature, this study adds quantitative support to the existing body of literature. This research reinforces the importance of the impact of teacher identity norms in sustaining or limiting teacher collaboration in school cultures. Moreover, this research

suggests that by examining teacher identity norms in school cultures, the potentiality for collaboration in schools can be predicted.

An African proverb states, “If you want to go fast, go alone. If you want to go far, go together.” After years of failed reforms that were meant for fast change, teachers now have an opportunity to work with their peers to build deep, meaningful, and sustainable changes in teaching and learning. By working together to affect change, teachers, as agents of change, can go far in meeting the future needs of their students.

Implications for Practice

Teacher collaboration, whether to support systemic policy implementation or to meet the diverse learning needs of students, is recommended as an inherent and pervasive component of school cultures and educational change in the 21st century. However, the complexity of collaboration challenges the application of collaboration in practice. Two broad categories of practical implications arose from this study: (a) challenges in collaborative cultures and practice and (b) collaboration as a policy vector.

Challenges in Collaborative Cultures and Practice

The literature highlights the challenges of sustaining collaboration in schools. Although there is evidence that collaboration works (Hargreaves & Fullan, 2012; Piercey, 2010), "still, collaboration is more the exception than the rule" (Piercey, 2010, p. 55). As teacher collaboration encompasses a great many activities and purposes, it can mean different things from the different perspectives of governments, districts, administrators, and teachers. Further to this, among professional colleagues, collaboration is more democratic as it has "many voices as equal contributors" (Piercey, 2010, p. 55). Teachers’ lack of commitment or attitude of resistance is sometimes cited as the reason for the failure

to build collaborative cultures (Piercey, 2010). However, the results of this research showed that teachers believed in the importance of the process of collaboration but did not experience it in all schools. This result showed a gap between the ideology of desired collaboration and the reality of actual collaboration in teachers' practices. In order to narrow this gap and to encourage more actual collaboration, administrators and system leaders need to provide stronger supports, such as regular joint release time, for groups of teachers to work collaboratively on planning, developing, and assessing curriculum to meet students' needs. When administrators provide strong sustained supports for teachers' collaborative work, working together can become an inherent part of teachers' daily professional timetables, as has been found in countries such as Finland, Korea, and Japan (Sahlberg, 2011).

This research supported the claims in the literature (e.g., Cutcher, 2009; Palmer, 1998/2007) that competition limits cooperation and collaboration in organizations, and that individualism and conservatism are reinforced when teachers work in isolation (Hargreaves & Fullan, 2012). The cluster of norms that were shown to correlate positively and negatively with collaboration may be at play in influencing the potentiality of growing a collaborative culture. In a school culture that is anchored by the norms of innovation, interdependence, and cooperation, collaboration can be reinforced. In a school culture that reinforces the norms of conservatism, individualism, and competition, collaboration is likely to be limited. These results imply that the administrators need to be cognizant of the norms that build and break down collaboration and to implement strategies that actively support collegiality. Examples of supportive strategies could be team-building activities that promote openness, benevolence, honesty, trust, and reliability (Tschannen-Moran,

2004), activities to build skills in collegial decision making (Hord, Roussin, & Sommers, 2010) and a shared vision and practices for the improvement of teachers practices (Hord & Tobia, 2012).

Teachers can use these findings to adapt their own practices and to influence the practices of their colleagues. In this research, the participants clearly valued teacher collaboration as a critical component to their teaching practice. By becoming aware of how cooperation and interdependence can build collaboration, teachers can work on developing higher levels of cooperation, interdependence, and collaboration in their practices. In addition, teachers can make an effort to interact with their colleagues more frequently than on a weekly basis. With more frequent interactions, there are more opportunities to build interdependence and cooperation among colleagues. By thinking beyond their classroom doors, teachers can reformulate "what it means to be collegial" (Timperley & Robinson, 2000, p. 59) and what it means to be a teacher in their school, in their board, and in their profession.

When organizations undergo cultural change, attitudes and values must be reshaped in order to make the appropriate adjustments to remain organizationally cohesive (Tichy, 1980). In the case of teachers, their attitudes of how to interact with colleagues need to change. In this study, participants showed they valued collaboration, but they did not experience it as much as they valued it. By understanding which teacher identity norms positively impact collaboration, teachers can help to reinforce these norms and to support the building of collaborative cultures. For example, teachers can work out strategies and interaction patterns that increase cooperative and interdependent teamwork and that decrease competition among colleagues.

Reinforcing the development of effective interpersonal relationships can further build a collaborative culture. Stephenson and Thibault (2006) provide a myriad of relationship and team-building activities based on the importance of humour. Although their work is not meant to be a scholarly approach to building collegiality, it is a "practical, solution-oriented compendium of ideas" gathered from the experiences of teachers and principals (Stephenson & Thibault, 2006, p. 3). After all, they argue, when laughing with colleagues, it is difficult for teachers to sustain collegial distrust and resentment.

With respect to recognizing teachers' contributions in schools, levels of collegiality are reinforced when teachers feel that their work is equitably valued. However, delivering recognition can negatively impact collegiality if it is distributed unevenly or if it increases levels of competition (Johnson, 2003). Administrators can provide more equitable recognition among staff by "recognizing teachers' effort and communicating expectations" (Weathers, 2011, p. 1) for all teachers, not just the few high-profile contributors. "Principals can then build on those elements of recognition, trust, and support to focus conversations and activity more tightly around teaching and learning" (Hargreaves & Fullan, 2012, p. 188). Further, when equitable teacher recognition is provided, it reinforces cooperation among colleagues and supports collaborative school cultures. It is important to note that recognition needs to be specific and authentic so that it does not morph into contrived recognition.

Teacher Collaboration as a Policy Vector

Learning communities have been advocated as a mechanism to give teachers more influence over educational change (Fullan et al., 2006; Timperley & Robinson, 2000). In addition, teacher collaboration has been used as a vehicle in educational policy

implementation. However, the uncertainty of complex collegial interactions can negatively affect the collective policy implementation process (Ball et al., 2012). This research may be used to address some of the issues by informing policy authors on the realities of what impacts teachers' collaboration in school settings.

The literature sometimes views teachers as being resistant to working collaboratively (Lortie, 1975/2002; Piercey, 2010), but the teachers in this study highly valued collaboration with their colleagues even though they did not experience it at the same level. The reality may be that teachers wish to collaborate with their colleagues but do not as a result of challenges they face in their practice. When dealing with the complexity and ambiguity of classroom practices, policies that have been written from a different perspective than the context of the school setting may be difficult to put into practice. Further, the work of decoding and recoding policy text can be challenging for individuals and even more challenging when working with colleagues with differing pedagogy and levels of experience. Policy authors, therefore, need to account for the realities of schools and classrooms. For example, policy authors should acknowledge that there is a process of mediation at each level through which a policy reform passes. Policy authors need to make policy reforms flexible enough so that each organizational level, including the district, superintendent, principal, and teacher levels, will be able to fit the plans into their own context without deviating too far from the original intent of the reform (Ball et al., 2012).

When administrators are considering the implementation of initiatives, the culture of the school needs to be considered first before the goals of the reform. It is administrators who set the tone of school cultures and how colleagues interact with each other. As it is a

collaborative culture that reinforces and sustains the implementation of initiatives, administrators need to realize that, "without investment in underlying relationships, collaboration will be stilted, forced, and even damaging" (Hargreaves & Fullan, 2012, p. 114). This research showed that collaboration was positively linked to cooperation and interdependence among teacher colleagues. This result implies that these teacher identity norms need to be part of a school's culture in order to support a collaborative setting. By placing the importance of developing a supportive school culture ahead of the implementation of initiatives, administrators increase the chance of initiatives to be sustained within teaching practices and schools.

Implications for Further Research

This research highlights areas for further investigation. First, the relationships between teacher identity norms and teacher collaboration should be investigated beyond this study. This study found that the particular norms of innovation, interdependence, and cooperation have a positive impact on collaboration and that the norms of conservatism, individualism, and competition have a negative impact on collaboration. These correlations should be examined further in larger-scale quantitative teacher studies in order to corroborate the relationships and to fine-tune the recommendations for working with teacher norms in order to improve collaboration in schools.

Given that this research showed a negative relationship between collaboration and competition among teachers, particularly when competing for recognition, this relationship should be further examined. This study did not go into details about the extent or cause of competition in schools, and it is unlikely that a quantitative study could tease out these elements. However, a qualitative study could be helpful for further examining the extent

and causes of competition and its impact on teacher collaboration in schools.

The research showed that innovation and conservatism correlated with desired collaboration but not actual collaboration. The differences between desired versus actual collaboration and their links to innovation and conservatism in teachers' practices could be further explored in order to understand why there is a gap between the expectations and the reality in teachers' collaborative practices. Since teachers indicated that they change their practices to meet their students' needs, further research could address how teachers change their practices and how effectively teachers are meeting students' needs.

This study did not investigate the impacts on collaboration of the nature of the tasks in which teachers engage. Whereas collaboration might be easy for tasks that are relatively straightforward, such as holding grade-level business meetings and ordering classroom supplies, it might not be easy for more complex tasks such as approaches to mathematics instruction, consistency of implementing school rules, and the allocation of resources. Collegial conflicts can occur when the need for "interdependency, mutual obligations, shared commitments, and common understandings … are juxtaposed with individual perspectives, personal understandings, and unique knowledge bases and skill sets" (Mitchell & Sackney, 2011, p. 149). In future studies, researchers may consider addressing specifically which collaborative tasks present the most challenge in maintaining collaborative continuity and the extent to which the challenges are due to opposing pedagogies and epistemologies.

There has been a push towards building teachers' collaborative cultures in Ontario over the last 10 years, and this research suggests that this policy reform has impacted the way teachers view collaboration. In 2003, a large-scale educational change strategy was

implemented in Ontario in order to promote increases in literacy and numeracy for all students using a "tri-level" approach (Fullan, 2009, p. 102) involving "governments, school districts, and schools [to] work together on common approaches and strategies" (Levin, 2007, p. 330). A component of this change strategy was to support the "development of learning communities in schools and boards through the creation of leadership teams ... and the emphasis on sharing good practice" (Levin, 2007, p. 329). This "collaborative, not a top-down, approach" (Levin, 2007, p. 330) to educational change may have impacted teachers' attitudes and practices. In addition, the approach added the component of teacher leadership teams. As a good majority of participants in this study indicated that teacher collaboration was a critical component in their teaching practice, this suggests that the participants have incorporated collaboration into their identity as teachers. However, this cultural shift in the desire to collaborate may be incomplete as the research showed a gap between actual and desired collaboration. Further, the inclusion of the technical shift of focusing on teacher leadership may have had a role in this culture change as teachers influenced "organizational capacity, professionalism, instructional improvement, and student learning" (York-Barr & Duke, 2004, p. 255). However, the connection to the large-scale Ontario educational change strategy is unsupported by empirical evidence; therefore, further research should investigate if there has been a cultural shift in how teachers view the role of collaboration in their work.

Since the instrument in this study was developed using exploratory factor analysis and proved to be statistically appropriate for this study, other researchers and educational organizations may consider using the instrument to further investigate the connections between and among the identity norms and collaboration. As these norms are also

applicable to other organizations in measuring collaboration, innovation, conservatism, interdependence, individualism, cooperation, and competition, the instrument could be adjusted to measure these norms in organizations beyond education.

There is very little quantitative research investigating collaboration and the norms of interest. This study tested the correlations between teacher identity norms and collaboration, but further quantitative research could investigate cause-effect relationships between these variables. In future studies, with larger sample sizes, the relationships between the teacher identity norms and collaboration could be used to develop a predictive model. Using regression analysis, data could be analyzed to measure the extent to which the amount of collaboration can be attributed to the impact of each norm. By fine-tuning this model, governments, districts, and schools may understand what elements of collaboration need to be reinforced for strong collaborative communities. Researchers could also further test the hypotheses using correlations, ANOVAs, and independent samples t-tests to see if the same results occur. This would reinforce or challenge the findings that certain teacher identity norms reinforce or impede collaboration. Additional quantitative studies could further examine the impact of various demographic variables, including but not limited to gender and stage of career, on collaboration and teacher identity norms.

Literature suggests that secondary school teachers tend to be less collaborative than their elementary colleagues (Timperley & Robinson, 2000) and have been characterized by working in small isolated departmental groups. Consequently, only elementary teachers were selected in this study so that the nature of teaching in different panels (i.e., elementary vs. secondary school teachers) was not an intervening variable that affected the nature of

teacher collaboration. A similar study could be conducted to compare the teacher identity norms and collaboration of elementary versus secondary school teachers.

Conclusion

Piercey (2010) wrote that improved collaboration may be achieved when we "develop some common understanding, some significant attitudinal shift, and the applications of some specific skills and processes" (p. 55). This research provides a better understanding of how the teacher identity norms impact collaboration in Ontario elementary school cultures. Further, it shows that an attitudinal shift is evident as teachers in this study highly valued collaboration as part of their teaching practice. Finally, this research suggests that if processes are in place to support the teacher identity norms of innovation, interdependence, and cooperation, actual collaboration may also be supported.

As a community, few educators want to go back to a time when they worked alone and had little contact with their colleagues. When working in isolation, teachers have no colleagues to provide professional and emotional support in dealing with challenging students. In isolation, there are no peers to inspire teachers with ideas or to suggest resources. In isolation, there are no colleagues to provide support or depend upon when needed. Alone in practice, teaching becomes a lonesome profession. By opening their classroom doors, both literally and metaphorically, teachers have the opportunity (a) to develop important collegial relationships, (b) to build trust, (c) to receive the support only an understanding colleague can provide, and (d) to challenge their teaching practices with innovative ideas from their peers. By working together, teachers support their own needs, the needs of their students, and the needs of their school. Together, teachers, their students, and their schools will go far.

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Appendix A

Definition of Terms

Definitions of teacher identity norms and collaboration

Collaboration: the process in which teachers interact with each other in building their teaching practice and their knowledge of teaching within a school community.

Collaborative Teacher Communities (Professional Learning Communities): the space and time when teachers work together as "an array of specific interactions by which teachers discuss, plan for, design, conduct, analyze, evaluate, and experiment with the business of teaching" (Little, 1982, p. 338).

Competition: colleagues compete for resources (Day & Smethem, 2009) and recognition within the school setting (Johnson, 2003). As a result teachers do not share resources such as teacher materials or lesson plans with colleagues.

Conservatism: teachers follow the status quo and fail to adapt their teaching practices to meet their students' needs (Hargreaves & Shirley, 2009b).

Cooperation: teachers provide assistance and mutual aid to their colleagues to support their collective practice. In this definition, the act of cooperation is defined as a component of collaboration.

Individualism: teachers prefer to work in isolation from other teachers (Lortie, 1975)

Innovation: teachers take risks to develop their practices to meet students' needs (Lieberman, 2009).

Interdependence: teachers work together and rely on each other to support their practices (Lortie, 1975).

Appendix B

Copy of Pilot Study Questionnaire

Survey: Teachers working together - Pilot Study

Thank you for agreeing to participate in this pilot study. Data from this pilot study will be used to develop a questionnaire for a larger study. This large study will be designed to determine what factors influence teacher collaboration within an elementary school setting. Analysis from this data will provide important information to inform policy makers and boards of education on how to support teacher collaboration within teachers' professional lives.

All participant identities will be kept confidential and only the author of the survey will know the participants' identities. Upon receipt of each questionnaire, the participant will receive a pre-assigned individualized participant reference number which will be used to identify each participant's questionnaire data in the pilot study. As this reference number will not be linked to any personal identifiers, your confidentiality is secured.

All data will be securely stored in a locked filing cabinet or in password protected files. Once the pilot study data has been published, the all data, including the participants' questionnaires will be destroyed.

This research has been approved by Brock University's Research Ethics Board *(Brock REB#* 12-248*, contact information: reb@brocku.ca or 905-688-5550 ex. 3035, Faculty Advisor: Coral Mitchell)* and by the Assessment and Accountability Department at the Peel District School Board on April 29, 2013.

Pilot Study May 2013

The purpose of collecting data in this pilot study is to help develop questions in a final questionnaire for a larger study. The questionnaire statements will be revised based on the results of the pilot study.

This questionnaire should take about 15 to 20 minutes to complete.

Thank you for supporting this research by volunteering your time.

Please read the Information Consent Form enclosed and retain it for your files. Once the questionnaire is completed please return the sealed questionnaire to the person indicated on the envelope. Thank you.

For administrative use only

Participant reference number: _____

Date survey distributed: _____

Date survey received: _____

Date data entered: _____

For administrative use only

Participant reference number:

SECTION A

DEMOGRAPHICS

This section asks questions about your demographics as a teaching professional. *Please note that only contract-status elementary teachers will be included in this pilot study at this time.*

A1. Gender

☐ Female
☐ Male
☐ Other _____

A2. Type of teacher

☐ Permanent/Contract Full-time
☐ Permanent/Contract Part-time
☐ Supply/Long-term Occasional
☐ Other

A3. Teacher Panel/Union

☐ Elementary
☐ Secondary
☐ Other

A4. Number of year teaching (stated in # of years) ☐☐ years

A5. Number of years of university completed (stated in # of years) ☐☐ years

A6. Current teaching assignment in 2012/2013 (Grade level taught - pick most relevant selection)

☐ Primary JK-grade 3
☐ Split/mixed Primary/Junior
☐ Junior grade 4-6
☐ Split/mixed Junior/Intermediate
☐ Intermediate grade 7-10
☐ Senior grade 11-12
☐ High School grade 9-12
☐ English as a Second Language
☐ Special Education
☐ ESL/Spec. Ed
☐ Itinerant/Resource
☐ Administration
☐ Library
☐ Other
☐ _____

A7. School board(s) employed at _____

SECTION B	**TEACHERS WORKING TOGETHER** This section asks questions about how you work with other teachers in general. Each question should be answered using Likert scale of 1 to 5 with **1** indicating **strongly agree** and **5** indicating **strongly disagree**. *If you are unsure of a question or unsure of your answer please do not respond by leaving the question blank.* Please try to answer these questions as honestly as possible to provide the best information for this study. Remember that all your answers will be kept confidential.

Section B Questions	**Strongly Agree**				**Strongly Disagree**
B1. I feel working together with my colleagues makes me a better teacher.	**1**	**2**	**3**	**4**	**5**
B2. At my school, there is an equitable distribution of resources among teachers.	**1**	**2**	**3**	**4**	**5**
B3. Teachers at my school share school responsibilities equitably.	**1**	**2**	**3**	**4**	**5**
B4. I have trust and respect for my colleagues.	**1**	**2**	**3**	**4**	**5**
B5. I am comfortable providing my colleagues with my lesson plans and teacher materials.	**1**	**2**	**3**	**4**	**5**
B6. I do not mind if other teachers are in my classroom watching me teach.	**1**	**2**	**3**	**4**	**5**
B7. If I am unexpectantly absent, my colleagues will help plan and support my classes.	**1**	**2**	**3**	**4**	**5**
B8. I prefer to work by myself than with other teachers.	**1**	**2**	**3**	**4**	**5**
B9. My colleagues help me be a better teacher.	**1**	**2**	**3**	**4**	**5**
B10. I prefer to do professional development on my own.	**1**	**2**	**3**	**4**	**5**
B11. If I am unexpectantly absent, I prefer to not ask other teachers to help plan and support my classes.	**1**	**2**	**3**	**4**	**5**
B12. I experience cooperation among my colleagues.	**1**	**2**	**3**	**4**	**5**
B13. It is important for teachers to cooperate together in a school setting.	**1**	**2**	**3**	**4**	**5**

SECTION B	**TEACHERS WORKING TOGETHER** This section asks questions about how you work with other teachers in general. Each question should be answered using Likert scale of 1 to 5 with **1** indicating **strongly agree** and **5** indicating **strongly disagree**. *If you are unsure of a question or unsure of your answer please do not respond by leaving the question blank.*

Section B Questions	**Strongly Agree**				**Strongly Disagree**
B14. I prefer to do professional development with other teachers.	**1**	**2**	**3**	**4**	**5**
B15. I am uncomfortable providing colleagues with my lesson plans and teacher materials.	**1**	**2**	**3**	**4**	**5**
B16. I feel my colleagues will judge me professionally, if I share my lesson plans and teacher materials.	**1**	**2**	**3**	**4**	**5**
B17. I feel my colleagues will take my ideas and not give me credit, if I share my lesson plans and teacher materials.	**1**	**2**	**3**	**4**	**5**
B18. I prefer to work with other teachers than work on my own.	**1**	**2**	**3**	**4**	**5**
B19. I feel my colleagues compete with each other for recognition in our school.	**1**	**2**	**3**	**4**	**5**
B20. I am uncomfortable with other teachers watching me teach in my classroom.	**1**	**2**	**3**	**4**	**5**
B 21. I feel my colleagues will judge me professionally, if they watch me teach.	**1**	**2**	**3**	**4**	**5**
B22. It is not vital for teachers to cooperate together in a school setting.	**1**	**2**	**3**	**4**	**5**
B23. I do not always trust and respect my colleagues.	**1**	**2**	**3**	**4**	**5**
B24. At my school, there is an inequitable distribution of resources among teachers.	**1**	**2**	**3**	**4**	**5**

SECTION C	**TEACHERS WORKING TOGETHER** This section asks questions about how you work with other teachers within your teaching practice. Each question should be answered using Likert scale of 1 to 5 with **1** indicating **strongly agree** and **5** indicating **strongly disagree**. *If you are unsure of a question or unsure of your answer please do not respond by leaving the question blank.* Please try to answer these questions as honestly as possible to provide the best information for this study. Remember that all your answers will be kept confidential.

Section C Questions	**Strongly Agree**				**Strongly Disagree**
C1. My colleagues and I help each other in our teaching practices.	**1**	**2**	**3**	**4**	**5**
C2. If I have a challenge with my teaching practice, I can rely on my colleagues for help.	**1**	**2**	**3**	**4**	**5**
C3. If my colleagues need help with their teaching practice, I am willing to provide help to my colleagues.	**1**	**2**	**3**	**4**	**5**
C4. My colleagues interact with me regarding their teaching practices on a daily basis.	**1**	**2**	**3**	**4**	**5**
C5. My colleagues interact with me regarding their teaching practices on a weekly basis.	**1**	**2**	**3**	**4**	**5**
C6. If I have a challenge with my teaching practice, I cannot rely on my colleagues for help.	**1**	**2**	**3**	**4**	**5**
C7. I interact with my colleagues regarding my teaching practice on a daily basis.	**1**	**2**	**3**	**4**	**5**
C8. I interact with my colleagues regarding my teaching practice on a weekly basis.	**1**	**2**	**3**	**4**	**5**
C9. I rely on my colleagues as part of my teaching practice.	**1**	**2**	**3**	**4**	**5**
C10. My teaching practice would be more challenging without the support of my colleagues.	**1**	**2**	**3**	**4**	**5**
C11. I am uncomfortable with my colleagues giving me feedback regarding my teaching practices.	**1**	**2**	**3**	**4**	**5**

SECTION C	**TEACHERS WORKING TOGETHER** This section asks questions about how you work with other teachers within your teaching practice. Each question should be answered using Likert scale of 1 to 5 with **1** indicating **strongly agree** and **5** indicating **strongly disagree**. *If you are unsure of a question or unsure of your answer please do not respond by leaving the question blank.*

Section C Questions	**Strongly Agree**				**Strongly Disagree**
C12. I consistently work with other teachers as part of my teaching practice.	**1**	**2**	**3**	**4**	**5**
C13. In order for other teachers have access to supplies, I only keep a minimal amount of school supplies (i.e. paper, notebooks, & pencils) in my classroom.	**1**	**2**	**3**	**4**	**5**
C14. My teaching practice would be easier if I did not have to work with my colleagues.	**1**	**2**	**3**	**4**	**5**
C15. I prefer to rely on myself and not to rely on my colleagues as part of my teaching practice.	**1**	**2**	**3**	**4**	**5**
C16. Due to a lack of equitable distribution of resources among colleagues, I keep teaching materials and resources to myself.	**1**	**2**	**3**	**4**	**5**
C17. My colleagues have little or no impact on my teacher practice.	**1**	**2**	**3**	**4**	**5**
C18. I prefer to work alone in my teaching practice instead of working with other teachers.	**1**	**2**	**3**	**4**	**5**
C19. I feel professionally isolated from my colleagues.	**1**	**2**	**3**	**4**	**5**
C20. In order to make sure I have enough supplies for my teaching practice, I have a significant amount of school supplies (i.e. paper, notebooks, & pencils) stored in my classroom .	**1**	**2**	**3**	**4**	**5**
C21. In order to improve my practice, I encourage input from my colleagues regarding my teaching practices.	**1**	**2**	**3**	**4**	**5**

SECTION D	**TEACHERS WORKING TOGETHER IN GROUPS** This section asks questions about how you work with other teachers in groups. Each question should be answered using Likert scale of 1 to 5 with **1** indicating **strongly agree** and **5** indicating **strongly disagree**. *If you are unsure of a question or unsure of your answer please do not respond by leaving the question blank.* Please try to answer these questions as honestly as possible to provide the best information for this study. Remember that all your answers will be kept confidential.

Section D Questions	**Strongly Agree**				**Strongly Disagree**
D1. Teacher collaboration includes dialogue based on teaching practices and student success.	**1**	**2**	**3**	**4**	**5**
D2. Teacher collaboration includes meeting with my colleagues on a weekly basis.	**1**	**2**	**3**	**4**	**5**
D3. Teacher collaboration includes sharing resources with my colleagues.	**1**	**2**	**3**	**4**	**5**
D4. Teacher collaboration includes sharing teaching materials like my lesson plans and assessments with my colleagues.	**1**	**2**	**3**	**4**	**5**
D5. Teacher collaboration happens within the instructional day.	**1**	**2**	**3**	**4**	**5**
D6. Teacher collaboration happens outside of the instructional day.	**1**	**2**	**3**	**4**	**5**
D7. Our schools' level of teacher collaboration is high.	**1**	**2**	**3**	**4**	**5**
D8. We make decisions together as collaborative groups.	**1**	**2**	**3**	**4**	**5**
D9. Teacher collaboration I engage in is done through personal and professional choice.	**1**	**2**	**3**	**4**	**5**
D10. Teacher collaboration I engage in is done due to administrative influences.	**1**	**2**	**3**	**4**	**5**
D11. Teacher collaboration I engage in is done in formal spaces like meeting rooms.	**1**	**2**	**3**	**4**	**5**
D12. Teacher collaboration I engage in is done in informal spaces like the halls and the staff room.	**1**	**2**	**3**	**4**	**5**

SECTION D	**TEACHERS WORKING TOGETHER** This section asks questions about how you work with other teachers in groups. Each question should be answered using Likert scale of 1 to 5 with **1** indicating **strongly agree** and **5** indicating **strongly disagree**. *If you are unsure of a question or unsure of your answer please do not respond by leaving the question blank.*

Section D Questions	**Strongly Agree**				**Strongly Disagree**
D13. Teacher collaboration I engage in is done due to pressure from administration.	**1**	**2**	**3**	**4**	**5**
D14. Teacher collaboration happens all the time and anywhere when teachers get together.	**1**	**2**	**3**	**4**	**5**
D15. Teacher collaboration happens when we need to work on a specific issue, project, or problem.	**1**	**2**	**3**	**4**	**5**
D16. As part of my teaching practice, I engage in collaborative team planning and assessment.	**1**	**2**	**3**	**4**	**5**
D17. As it is not helpful to my teaching practice, I prefer not to engage in collaborative team planning and assessment sessions.	**1**	**2**	**3**	**4**	**5**
D18. I have been a peer mentor or mentee.	**1**	**2**	**3**	**4**	**5**
D19. I have been involved in self-directed action research with a colleague.	**1**	**2**	**3**	**4**	**5**
D20. I have been involved in administrative directed collaborative learning cycles.	**1**	**2**	**3**	**4**	**5**
D21. As part of my practice, I regularly plan with my colleagues.	**1**	**2**	**3**	**4**	**5**
D22. As part of my practice, I spend a great deal of time engaging in teacher collaboration.	**1**	**2**	**3**	**4**	**5**
D23. I need more time to be involved in teacher collaboration.	**1**	**2**	**3**	**4**	**5**
D24. Teacher collaboration is a critical component to my teaching practice.	**1**	**2**	**3**	**4**	**5**
D25. Teacher collaboration happens only in staff meetings and grade level meetings.	**1**	**2**	**3**	**4**	**5**

SECTION E	**TEACHERS WORKING IN THEIR PRACTICE** This section asks questions about how you work to develop your practice on your own as an individual teacher. Each question should be answered using Likert scale of 1 to 5 with **1** indicating **strongly agree** and **5** indicating **strongly disagree**. *If you are unsure of a question or unsure of your answer please do not respond by leaving the question blank.* Please try to answer these questions as honestly as possible to provide the best information for this study. Remember that all your answers will be kept confidential.

Section E Questions	**Strongly Agree**				**Strongly Disagree**
E1. I change or adapt my lesson plans and assessments on a daily or weekly basis.	**1**	**2**	**3**	**4**	**5**
E2. I develop new lesson plans, curriculum units, and assessments every school year.	**1**	**2**	**3**	**4**	**5**
E3. I like to try new things in my teaching practice.	**1**	**2**	**3**	**4**	**5**
E4. I adapt my lessons and assessments to meet the needs of my students.	**1**	**2**	**3**	**4**	**5**
E5. I like to take risks in my teaching practice.	**1**	**2**	**3**	**4**	**5**
E6. My teaching practices are always changing.	**1**	**2**	**3**	**4**	**5**
E7. I prefer not to change or adapt my lesson plans and assessments.	**1**	**2**	**3**	**4**	**5**
E8. I prefer to keep my lesson plans, curriculum units, and assessments the same each school year.	**1**	**2**	**3**	**4**	**5**
E9. I prefer to stick to the teaching practices that I know work rather than try new things in my teaching practice.	**1**	**2**	**3**	**4**	**5**
E10. I prefer not to take risks in my teaching practice.	**1**	**2**	**3**	**4**	**5**
E11. My teaching practices do not need to change.	**1**	**2**	**3**	**4**	**5**
E12. In order to meet the needs of my students, I have to adapt my lesson plans while I am teaching.	**1**	**2**	**3**	**4**	

SECTION F	**TEACHERS PROVIDING FEEDBACK** This section allows you to add comments regarding this research. If you wish, please feel free to comment below. In order to honour the confidential nature of this research, please do not use specific names of teachers or schools (i.e. do not use your own name or school name). Remember that all comments will be kept confidential.

F1. I do not wish to add any comments. ☐ No comments made

Do you have any comments that you would like to add regarding the topics addressed in this survey?

Thank you for taking your time to participate in this study.

Please return the questionnaire, sealed confidentially, in the envelope provided.

Appendix C

Copy of Online Survey

Survey: Teachers Working Together - Page 1

Thank you for your participation in this study. Data from this study is designed to determine what factors influence teacher collaboration within an elementary school setting. Analysis from this data will provide important information to inform policy makers and boards of education on how to support teacher collaboration within teachers' professional lives.

All participant identities will be anonymous and the researcher will not know the participants' identities or the participants' schools or their school boards. There will be no way for the researcher to identify your survey responses; all survey data will be submitted digitally to the researcher through a secure process without any individual identifiers. Due to the anonymous nature in handling your survey data, the researcher will not be able to identify your data once you complete and submit the survey.

WHAT'S INVOLVED

As a participant, you will be asked to complete the following electronic survey. Data from this survey will be used to investigate what factors influence teacher collaboration within an elementary school setting. Participation will take approximately 5 to 10 minutes of your time.

POTENTIAL BENEFITS AND RISKS

Possible benefits of participation include long-term outcomes from the publication of the study. Data from this research will provide important information to inform policy makers and boards of education on how to support teacher collaboration in a way that respects and reflects the day-to-day experiences and the professional lives of teachers. As there is no way of identifying participants or their schools or boards, there is minimal risk to participants.

CONFIDENTIALITY

All information you provide is considered confidential; your name nor your school or board of education will not be associated with the data collected in the study. Furthermore, because our interest is in the average responses of the entire group of teacher participants, your data will not be presented individually in written reports of this research. Personal identifiers or individualized participant reference numbers will not be collected in this study and will not be available for any publications arising from the study. All data collected during this study will be stored in a secure location and/or a password protected file.

All data will be destroyed once the results of the study have been published. Since you will be completing the survey online through the Brock University survey website (i.e. FOE LimeSurvey), the researcher will not know your email address or have any way of linking your responses to your identity.

VOLUNTARY PARTICIPATION AND WITHDRAWAL FROM THE STUDY

Participation in this study is voluntary.

If you wish, you may decline to answer any questions or to participate in any component of the study. If this is the case, please indicate "no answer". Note that the online survey will automatically indicate "no answer" if you do not respond to the survey statements. Once you have completed the online survey, you will be asked to submit your data by pressing "Submit". Up to the point that you electronically submit your data, you can withdraw from the study at any time by exiting the website. Once you submit your data, there is no way to reverse this submission. Because there will be no way to link your identity to your data, you will be unable to withdraw from this study at this point.

If you do not wish to participate, please exit from the Brock survey website now.

Next ⇨

Exit and clear

PUBLICATION OF RESULTS

Results of this study will be used to complete the researcher's PhD dissertation and may be published in professional and academic journals and presented at conferences. Research results for this study will be available by contacting Deborah Weston, Principal Student Investigator, or Dr. Coral Mitchell, Faculty Advisor. You may contact the researchers at any time before, during, and after your participation in this study.

CONTACT INFORMATION AND ETHICS CLEARANCE

If you have any questions about this study or require further information, please contact Ms. Deborah Weston, the Principal Student Investigator, at dw99ac@brocku.ca or Dr. Coral Mitchell, Faculty Advisor at Brock University**,** Department of Undergraduate and Graduate Studies in Education cmitchell@brocku.ca or (905) 688-5550 Ext. 4413. You may contact the researchers at any time before, during, and after your participation in this study. Please consider keeping a copy of this information in case you wish to contact the researchers at a later date.

This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University REB#13-051 on October 23rd, 2913. If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

Thank you for your consideration in participating in this study.

Next ⇨ Exit and clear

Survey: Teachers Working Together - Page 2

Thank you for your participation in this study. Data from this study is designed to determine what factors influence teacher collaboration within an elementary school setting. Analysis from this data will provide important information to inform policy makers and boards of education on how to support teacher collaboration within teachers' professional lives.

All participant identities will be anonymous and the researcher will not know the participants' identities or the participants' schools or their school boards. There will be no way for the researcher to identify your survey responses; all survey data will be submitted digitally to the researcher through a secure process without any individual identifiers. Due to the anonymous nature in handling your survey data, the researcher will not be able to identify your data once you complete and submit the survey.

CONSENT FORM

By completing the online survey, I indicate my consent to agreeing to participate in the study described above. I have made this decision based on the information I have read in the Information for Participation Form. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future. As I am completing this online study, I may withdraw from participation at any time by existing the website.

***I consent to my participation in this research.**

- (•) Yes
- ( ) No

Next ⇨

Exit and clear

Survey: Teachers Working Together - Page 3

Thank you for your participation in this study. Data from this study is designed to determine what factors influence teacher collaboration within an elementary school setting. Analysis from this data will provide important information to inform policy makers and boards of education on how to support teacher collaboration within teachers' professional lives.

All participant identities will be anonymous and the researcher will not know the participants' identities or the participants' schools or their school boards. There will be no way for the researcher to identify your survey responses; all survey data will be submitted digitally to the researcher through a secure process without any individual identifiers. Due to the anonymous nature in handling your survey data, the researcher will not be able to identify your data once you complete and submit the survey.

SECTION A -TEACHERS WORKING TOGETHER - DEMOGRAPHICS

Please complete this section.

***Gender**

- (•) Female
- ( ) Male

***Type of current contract**

Choose one of the following answers

Please choose [Permanent/Contract Full-time]

***Current teacher panel/union**

Choose one of the following answers

Please choose [Elementary]

***Number of equivalent years teaching (stated in # of years)**

Answer 8

Only numbers may be entered in this field.

*****

Current teaching assignment in 2013/2014
Grade level taught - please pick the most relevant selection

Choose one of the following answers

Please choose
Junior grade 4-6

***In what type of school board(s) do you currently teach?**

Is it predominantly described as:

Choose one of the following answers

Please choose Urban - Suburb

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Thank you for your participation in this study. Data from this study is designed to determine what factors influence teacher collaboration within an elementary school setting. Analysis from this data will provide important information to inform policy makers and boards of education on how to support teacher collaboration within teachers' professional lives.

All participant identities will be anonymous and the researcher will not know the participants' identities or the participants' schools or their school boards. There will be no way for the researcher to identify your survey responses; all survey data will be submitted digitally to the researcher through a secure process without any individual identifiers. Due to the anonymous nature in handling your survey data, the researcher will not be able to identify your data once you complete and submit the survey.

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	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	No answer
Our schools' level of teacher collaboration is high.	○	◉	○	○	○	○
Teacher collaboration is a critical component to my teaching practice.	◉	○	○	○	○	○
I experience cooperation among my colleagues.	○	○	○	◉	○	○
I do not mind if other teachers are in my classroom watching me teach.	◉	○	○	○	○	○
My colleagues interact with me regarding their teaching practices on a weekly basis.	○	◉	○	○	○	○

⇦ Previous Next ⇨ Exit and clear

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	No answer
I feel my colleagues compete with each other for recognition in our school.	○	◉	○	○	○	○
My colleagues interact with me regarding their teaching practices on a daily basis.	○	○	○	◉	○	○
I am uncomfortable with other teachers watching me teach in my classroom.	○	○	○	○	○	◉
I interact with my colleagues regarding my teaching practice on a weekly basis.	○	◉	○	○	○	○
I feel professionally isolated from my colleagues.	○	○	○	○	○	◉
In order to improve my practice, I encourage input from my colleagues regarding teaching practices.	○	◉	○	○	○	○

⇦ Previous Next ⇨ Exit and clear

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	No answer
I like to take risks in my teaching practice.	◉	○	○	○	○	○
I prefer to work alone in my teaching practice instead of working with other teachers.	○	○	○	○	◉	○
I like to try new things in my teaching practice.	◉	○	○	○	○	○
I prefer to stick to the teaching practices that I know work rather than try new things in my teaching practice.	○	○	○	○	○	◉
I prefer to rely on myself and not to rely on my colleagues as part of my teaching practice.	○	○	○	○	○	◉

⇦ Previous Next ⇨ Exit and clear

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	No answer
If I have a challenge with my teaching practice, I cannot ask my colleagues for help.	○	○	○	◉	○	○
I interact with my colleagues regarding my teaching practice on a daily basis.	○	○	○	◉	○	○
I adapt my lessons and assessments to meet the needs of my students in my teaching practice.	◉	○	○	○	○	○
My colleagues have little or no impact on my teaching practice.	○	○	○	◉	○	○
I prefer not to take risks in my teaching practices.	○	○	○	○	◉	○
My teaching practices are always changing.	◉	○	○	○	○	○

⇦ Previous Submit ⇨ Exit and clear

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Once you have completed the completed the online survey,
please press "Submit" below.

Up to the point that you electronically submit your data, you can withdraw from the study at any time by exiting the website. Once you submit your data, there is no way to reverse this submission. Because there will be no way to link your identity to your data, you will be unable to withdraw from this study at this point.

⇦ Previous Submit ⇨

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Thank you for taking your time to complete this survey.

Your input matters. Data from this research will provide important information to inform policy makers and boards of education on how to support teacher collaboration in a way that respects and reflects the day-to-day experiences and the professional lives of teachers.

Deborah Weston, Ontario Teacher & Ph.D. Candidate at Brock University.